How Can the Education-Industry Partnership within the Qatari Oil & Gas Industry Facilitate Engineering Graduates' Transition from School to Work and Enhance their Engagement with the Labour Market?

Thesis Submitted for the Degree of

Doctor of Philosophy

By

Mohammad Mahmoud Abul-Ola

Centre for Labour Market Studies, School of Management,

College of Social Sciences,

University of Leicester

November 2015

Title: How Can the Education-Industry Partnership within the Qatari Oil & Gas Industry Facilitate Engineering Graduates' Transition from School to Work and Enhance their Engagement with the Labour Market?

Author: Mohammad Mahmoud Abul-Ola

ABSTRACT

There continues to be a significant scarcity of engineering graduates in Qatar, despite the increasing demand for this category of graduates, especially within the prospering oil and gas industry. This research aims to exploring the areas that require attention from the education-industry partnership in order to minimize the obstacles associated with the transition process, identifying the potential ways through which other stakeholders may help enhance the education-industry partnership and identifying potential models which both help explain and can aid in facilitating the school-to-work transition and enhancing the engagement levels with the labour market. However, the research addresses the education-industry relationship in a wider dimension, not limiting the focus to the 'university-industry' relationship, as is frequently the case whenever the former term is used.

The study deployed a qualitative research methodology to address the key research issues. The data collected was from semi-structured interviews, structured interviews, focus group discussion and self-completion questionnaires, in addition to the researcher's own observations.

The findings indicate that the current forms of collaboration are limited to typical university-industry relationships and that the existing career education practices are inadequate in serving national developmental strategies effectively.
Furthermore, the findings indicate a declining aspiration path among engineering graduates and concerning orientations towards the labour market despite the prosperous economic conditions and generous investment in education and training.

While appreciating that many factors may affect the transition process, the research highlights the necessity for all concerned parties to focus on career education at all stages: a significant attribute/output of an effective education-industry partnership which would facilitate smooth entry into the labour market and effective engagement with the world of work; which will ultimately lead to higher individual satisfaction, and an enhanced economic performance. Meanwhile it is argued in this study that any investment in human capital which aims to help form skills should not omit developing the "motives from within" individuals. It further emphasizes that building the sense of responsibility is a key to enhancing the outputs of any skill formation or development process.

The thesis makes two main contributions to the existing body of knowledge: The Stair of Employability and the Principle-Based Career Education. The former represents a different way of thinking of employability in association with the school-to-work transition process; the latter represents a different way of thinking of career education in association with the promotion of intrinsic values.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

D-A	Demand-Abilities
ECSSR	Emirates Center for Strategic Studies and Research
ENOC	Emirates National Oil Company
GCC	Gulf Cooperation Council
GCSE	General Certificate of Secondary Education
GDP	Gross Domestic Product
GPA	Grade Point Average
GSPD	General Secretariat for Development Planning
HEI	Higher Education Institute
HR	Human Resources
IEA	International Energy Agency
ILO	International Labour Office
IMF	International Monetary Fund
I-N	Individual-Nation
IRDW	Institutional Research and Data Warehouse
K-12	Kindergarten through Grade 12
LMIS	Labour Market Information System
LMS	Labour Market Strategy
LNG	Liquefied Natural Gas
LR	Literature Review
MBA	Master of Business Administration
MLSA	Ministry of Labour and Social Affairs
MOEHE	Ministry of Education and Higher Education
NQF	National Qualifications Framework
NGRF	National Guidance Research Forum
N-S	Needs-Supplies
OECD	Organisation for Economic Co-operation and Development
OIPD	Office of Institutional Planning and Development
O-N	Organization-Nation
PDP	Professional Development Plan
PMP	People Master Plan
P-E	Person-Environment
P-O	Person-Organization
QA	Qatar Academy
QCF	Qatar Career Fair
QF	Qatar Foundation for Education, Science, and Community Development
QFC	Qatar Financial Center
QIX	Qatar Information Exchange
QLM	Qatar Labour Model
QNV	Qatar National Vision
QP	Qatar Petroleum
QSA	Qatar Statistical Authority

QU	Qatar University
RAND	The RAND Institute
RQPI	RAND-Qatar Policy Institute
SDC	Social Development Center
SEC	Supreme Education Council
STW	School to work
STWT	School-to-work transition
UAE	United Arab Emirates
UK	United Kingdom
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USA	United States of America
VET	Vocational Education and Training
WB	World Bank

PART 1: INTRODUCTION TO THE THESIS

CHAPTER 1: INTRODUCTION TO THE RESEARCH

1.0 INTRODUCTION

In this chapter, the researcher outlines the basis of the research, the rationale and motivation behind the key research questions. The chapter provides a brief overview of the research background, main research questions, research aims and objectives, and a justification for the research: namely, the evolving debate on school-to-work transition (STWT) in the State of Qatar, with reference to key facts related to the oil and gas industry in the country. The chapter then concludes with an outline of the structure.

1.1 RESEARCH BACKGROUND

There is a continually significant scarcity of engineering graduates in Qatar, despite an on-going increase in demand for this category of graduates, especially within the prospering oil and gas sector. In fact, while oil and gas contributed 51.7% and 58.3% of Qatar's total nominal GDP in 2010 and 2011 respectively (Qatar Statistics Authority (QSA), 2012, p. 4), according to the 2010 General Census of the State of Qatar, only 6.9% of economically active Qataris were working in the mining and quarrying industry: representing 9.3% of economically active male and 2.6% of economically active female Qataris.

Moreover, over the academic years from 1976-77 to 2009-10, of 6,074 male Qatari graduates, there were only 721 in engineering fields; while of 19,002 female Qatari graduates, there were only 302 in engineering fields (Institutional Research and Data Warehouse (IRDW) at Qatar University, 2011c).

These figures, coupled with the researcher's own interaction with different concerned parties, including senior officials within the strategic planning

authorities, senior managers within the oil and gas industry, and interested researchers and academics, led the researcher to wonder why the oil and gas industry in general and engineering professions in particular seem to be only sparingly approached by Qataris in general; and female Qataris in particular.

While different parties may provide different answers for such a phenomenon, and some tend to exchange blame, a common tendency was to question both the ability of the educational institutions to achieve an appropriate level of preparedness of their students prior to entering the labour market, and that of the industry to facilitate a smooth transitional stage and provide an appropriate workplace learning environment.

It is not the researcher's intention to identify whom to blame, but rather to highlight the importance of the education-industry partnership and the way it may help in facilitating the transition of this highly demanded resource in the industry. A more specific aim is to identify potential models which both help explain and can aid policymakers in bolstering the education-industry partnership towards facilitating the STWT and enhancing the engagement levels with the labour market.

Being an engineer by profession, with core business activities within the oil and gas industry, who interacts with professionals and senior officials representing educators, employers, and labour market policymakers in Qatar, as well as with many engineering graduates as part of daily business activities, the researcher has observed how the issue of STWT has gradually entered the political and social debate in the country.

The researcher's interest in the research question has arisen from concern

about the difficulties that newly graduating Qatari engineers face in the labour market. This is not only an economic issue: it has wider implications that raise questions about (a) the educational system's ability to prepare graduates for engaging with the work environment; (b) the willingness and capabilities of graduates, as key stakeholders in the transition process, to adapt to the work environment; and (c) employers' role in facilitating this crucial stage and arranging the appropriate working atmosphere that allows for an effective engagement of graduates, once they are on board.

1.2 RESEARCH QUESTION AND ASSOCIATED ISSUES

The evolution of the research question in its current form has been a lengthy process. It originated in very generic form: 'How to improve the transition from school to work in Qatar?' Over time, it became apparent that this was too general and required significant refining. This resulted in its being re-formed as: 'How to improve the transition of engineering graduates from school to work in Qatar?', adding a specific significant category of graduates to look at, then evolving to: 'What are the challenges facing engineering graduates during the transition from school to work in the Qatari labour market?', in an attempt to focus the research on the challenges faced by engineering graduates. A further re-phrasing, to be even more precise, was: 'How can HR policies in the oil and gas industry facilitate the transition of engineering graduates from school to work in Qatar?'

However, as the research evolved and the interaction with various stakeholders continuously took place, it was recognized that limiting the research focus to the role of HR policies and practices within the oil and gas industry in facilitating the

transition process, would limit the picture that needs to be looked at. Wider parameters were required, which would enable the inclusion and maintenance of key aspects of the 'transition scene'; and avoid overlooking any of key components.

Given the above, the research question was finally refined as follows:

'How can the education-industry partnership within the Qatari oil and gas industry facilitate engineering graduates' transition from school to work and enhance their engagement with the labour market?'

The impact of the education-industry partnership on STWT is a key focus of this research question; however, this relationship will be studied in light of important issues associated with the STWT and the education-industry partnership, such as the graduate labour market, graduate employability, career education, skill formation and workplace learning.

1.3 RESEARCH OBJECTIVES

Maximizing the efficiency of graduates is a main aim for both educational institutions and business organizations. Every tool which can contribute to enhancing such efficiency is worth consideration.

This study argues that the school-to-work transitional stage of graduates is critical, can significantly shape an individual's career path, and requires serious attention from all parties concerned, particularly education and industry. In addressing the research question, the thesis has the following specific objectives:

1. Exploring areas that require attention from the education-industry partnership in order to minimize the obstacles associated with the transition process and optimize the utilization of this scarce resource for the benefit of graduates, the industry and the country.

2. Identifying the potential ways through which other stakeholders may help enhance the education-industry partnership and other efforts associated with national human capacity building.

3. Identifying specific models which both help explain and can aid policymakers in bolstering the education-industry partnership towards facilitating the school-to-work transition and enhancing the engagement levels with the labour market.

1.4 JUSTIFICATION FOR THE RESEARCH

Qatar has been the fastest-growing economy in the Gulf region in recent years. According to the International Monetary Fund (IMF), Qatar was ranked 2nd worldwide, with a nominal GDP per capita of $98,329 in 2011 (IMF, 2012). It is expected that this figure will be even higher in the near future and will far outstrip the per capita GDP of countries such as the UK and the USA (IMF, 2012).

Though Qatar's oil reserves are lower than some neighbouring countries, it holds 16th position among the world's oil producers: the top five being Saudi Arabia, Iran, Iraq, the United Arab Emirates (UAE) and Kuwait (International Energy Agency (IEA), 2011, p. 2). The recent discovery of gas reserves boosted the resource base to an enviable level: Qatar has the world's third largest gas reserves.

Not surprisingly, Qatar's economy remains relatively undiversified. In 2004, quarrying and mining (crude oil and natural gas) amounted to more than 62% of GDP. Yet the energy sector employs very few workers: about 4% of the total in employment, of which only 8% are Qataris.

When handing over power to his son, Sheikh Tamim bin Hamad Al Thani, outgoing Emir, Sheikh Hamad Bin Khalifa Al Thani emphasized:

> 'While I am certain you are up to the responsibility, I urge you, to fear God by seeking knowledge and working hard; let knowledge be the beacon lighting your path; helping you build the future of the nation to its best; through knowledge emerge able generations, capable of shouldering responsibilities and embracing the straight right path.
>
> Let hard work be your habit in serving your country, steering away from complacency or reluctance or acceptance of existing state of affairs.
>
> Great nations cannot be built for current and future generations without the relentless work of their men; and cannot be safeguarded from greediness or threats without their sacrifice'.

The notion of continuing to satisfy the shortage of Qatari engineering professionals through recruiting non-Qataris does not help national human capacity development in the long run. This approach only deals with the symptoms, not the root causes of the problem.

Some critical characteristics of the labour force, in regard to evolution, structure and participation rates, include that: (a) annual growth of the non-Qatari labour force was almost 50% greater than that of the Qatari labour force (6.8% versus 4.7%); (b) Qataris have lower labour force participation rates than non-Qataris; (c) the fastest-growing group in the labour force is Qatari women (8.3%, more

than double the rate for Qatari men) (World Bank (WB), 2005, p. 39).

Meanwhile, labour market demand for local engineers, particularly in the energy sector, is increasing - but supply continues to be unable to meet rising demand. According to the Qatar University Office of Institutional Research and Data Warehouse (IRDW, 2011b) statistics, the number of registered male students in the engineering disciplines has been declining for the last 4 years. This should not be taken as an absolute indication of an overall drop in the number of students heading towards engineering studies, since these students now have more local options, such as Texas A and M and the College of the North Atlantic; but when compared with increasing labour market demand, the scarcity of Qatari engineers continues.

The issue of STWT has gradually entered the political and social debate in Qatar. Interest in this has arisen from concern about the difficulties that graduates face when first entering the labour market, and the associated implications. However, when talking about engineers, it should be noted that the debate over STWT is not limited to the difficulties which new engineering graduates face when heading to the labour market, but includes: (a) the ability of those graduates to engage effectively in the labour market; (b) their ability to attain career development within the oil and gas industry, in both technical and managerial pathways, and not be limited to office-based or managerial pathways; (c) the position of women in the engineering field.

Further, there is an evolving concern with the phenomenon of switching from engineering disciplines to non-engineering ones: although no accurate statistics illustrate the magnitude or spread of this among engineers.

In other words, interest in the role of the education-industry partnership with respect to the school-to-work (STW) transition process is based on the argument that the transitional stage of graduates not only affects their early start within the labour market or the commercial gains of their respective employers; but extends, with implications for later career stability and progression. This STW stage appears to have a significant impact in forming the views and perceptions of high school students about engineering studies, and hence, affects the overall engineering education chain: keeping in mind the modest numbers of Qatari engineering graduates as a proportion of the total number of graduates, and the tendency of graduates to cluster in other fields.

Thus this study is initiated in order to address the issues associated with engineering graduates' transition towards the oil and gas industry, and the way the education-industry partnership may help in facilitating the transition process. The research will therefore investigate whether the presence of effective education-industry partnerships can be helpful in facilitating engineering graduates' school-to-work transition, resulting in efficient skill formation among these graduates and enhanced performance.

At the same time, it is acknowledged by the researcher that an effective education-industry partnership may not be the sole requirement for a smooth and efficient school-to-work transition: much of this might have to do with other elements, particularly the individual graduate's orientation, attitude and willingness. These elements will also be explored within this study.

1.5 SIGNIFICANCE OF THE RESEARCH

On reviewing the existing literature within this particular area of research, only very limited work in a Qatari context has been identified; most existing work tends to be more general and unrelated to this particular category of graduates in this specific industry in a Qatari context. This makes this research as well as its findings unique: it will form a significant addition to the existing literature.

Notwithstanding the researcher's appreciation that confining the research to a specific category of graduates, a specific industry and within a specific geographical area might represent a limitation, the key contributions of this research are not merely limited to a specific graduate category, industry or country; but rather, can be generalised more widely.

1.6 PARAMETERS OF RESEARCH SCOPE

The research will address those issues deemed to concern the transition process within the education-industry domain - such as career education and skill formation - from the perspective of key stakeholders in the school-to-work transition process: educational institutes, graduates and employers. However, the education-industry relationship will also be addressed in its wider dimensions.

Accordingly, the transition process is addressed in pre-transition, in-transition and post-transition stages; these three essential stages will be defined and further illustrated in Chapter 3.

The researcher will aim for as comprehensive a study as possible; however, the survey methodology will provide only snapshots of the different stages within

the school-to-work transition process, by taking a sample of students/graduates to represent each stage. Time restrictions associated with the research process and its being performed by a single individual will inevitably limit the range of feasible methodologies.

1.7 STRUCTURE OF THE RESEARCH

This thesis consists of seven chapters, divided into four parts: commencing with Part 1, the Introduction to the Thesis, consisting of the current chapter, Chapter 1, which introduces the research background, key research question and associated issues, research objectives, justification, significance and structure of the research. Part 1 also includes Chapter 2, which provides a descriptive presentation of the Qatari context by outlining the key features of the Qatari population, labour force, education and economy.

Part 2, the Literature Review and Theoretical Framework, begins with Chapter 3: which presents a review of the main terms and concepts associated with the main research problem. This Chapter pays particular attention to the concepts related to school-to-work transition (STWT), the graduate labour market, graduate employability, and career development.

Chapter 4 develops the theoretical framework by explaining the relationships between the main terms and concepts associated with the research problem: with particular reference to human capital, career development and motivation theories, which are discussed in detail.

The theoretical framework is then fully established, illustrating how the study will research the relationship between the education-industry partnership, skill

formation, STWT and engagement with the labour market. This section concludes by deriving the research sub-questions necessary to address the main research question.

Part 3 consists of Chapter 5, the methodology chapter: which describes the research approach, the rationale behind selecting a qualitative approach, the methods adopted for data collection and analysis, as well as the obstacles and limitations encountered by the researcher during the process.

Part 4 starts with Chapter 6: which provides the reader with a detailed presentation of the results and analysis of the interviews with senior officials and representatives from state and non-state organizations, employers, educators and other interested parties; as well as self-completion questionnaires distributed to high school students, engineering students and fresh graduate engineers within the oil and gas industry, in addition to the results and analysis of the focus group discussion with career guidance policy and decision makers and the researcher's direct observations.

Finally, Chapter 7 concludes the research by summarizing the key findings, setting out its implications for theory and policy, highlighting this thesis' two original contributions to knowledge: the Stair of Employability concept and the Principle-Based Career Education concept.

This last Chapter illustrates the research's limitations; and makes recommendations for further work.

1.8 SUMMARY

STWT continues to emerge as a key area in the political and social debate in Qatar. This applies to various fields; but seems to have more significance in areas such as engineering and medicine. The engineers' situation within the oil and gas industry gains further importance due to the prominent position of this industry on the one hand, and scarcity of Qatari engineering graduates on the other.

The transition process' key stakeholders are typically identified as educational institutions, graduates, labour market policymakers and employers; as well as the society within which these parties function.

This study specifically explores how the education-industry partnership could help in facilitating the transition of engineering graduates into the oil and gas industry and enhance their engagement levels with the labour market; and whether a model or models can be identified which explain this and can aid policymakers. The next chapter provides a descriptive presentation of the key features of the Qatari context, within which the research is being performed.

CHAPTER 2: THE QATARI CONTEXT

2.0 INTRODUCTION

Chapter 1 introduced the thesis and provided us with a brief overview of the research background, main research question, research objectives, justification and significance of the research and the thesis structure.

This Chapter will shed light on key features of Qatar, with emphasis on employment segmentation in terms of gender, sector, industry and profession, to provide an overview of the context within which the research is being carried out.

The Chapter will also discuss relevant policy issues: with emphasis on the Qatar National Vision (QNV) 2030, human capacity building, and the policy of Qatarization as an essential component of human capital development.

2.1 KEY FEATURES OF THE QATARI POPULATION, LABOUR FORCE, EDUCATION AND ECONOMY

Prior to proceeding further, it is of great import to go over some essential facts and figures pertaining to population, labour force, education and economy in Qatar, as this will help establish a better understanding of the overall cultural and economic contexts within which the research is taking place. Reviewing these statistics will also be helpful for the researcher in selecting and designing the research instruments at a later stage.

2.1.1 Population

According to the Qatar Statistics Authority (QSA)'s General Census of Population, Housing and Establishments (2010), Qatar had a total population of 1,699,435 people: of whom 414,696 (24%) were female and 1,284,739 (76%)

male (see Table 2.1). This represented a huge increase of 128% from 2004, directly related to the significant economic growth of the country over the last two decades.

Table 2.1: Total Population by Gender (Source: QSA, 2010, Table 1, p. 2)

Year	Male	Female	Total	Male %	Female %
1997	342,496	179,564	522,060	65.6	34.4
2004	496,382	247,647	744,029	66.7	33.3
2010	1,284,739	414,696	1,699,435	75.6	24.4

One important point here is that the total number of economically active Qatari nationals (aged 15+) was only 74,087 (consisting of 46,979 males and 27,108 females). This illustrates the clear need to optimize the very limited national population.

Tables 2.2 and 2.3 illustrate the employment status and gender segmentation of both economically active Qataris and non-Qataris.

Table 2.2: Economically Active Qataris 15+ by Gender and Employment Status (Source: QSA, 2010, Table-7, p. 12)

Employment Status	Qatari					
	Male	**%**	**Female**	**%**	**Total**	**%**
Total	46,979	100.0	27,108	100.0	74,087	100.0
Employer	1,517	3.2	369	1.4	1,886	2.5
Own Account Worker	154	0.3	-	-	154	0.2
Employee	44,951	95.0	24,858	91.7	69,509	93.8
Unpaid Family Workers	20	-	4	-	24	-
Looking for work but never worked before	637	1.4	1,877	6.9	2,514	3.4

Table 2.3: Economically Active non-Qataris 15+ by Gender and Employment Status (Source: QSA (2010), Table-7-1, p. 12)

Employment Status	Non-Qatari					
	Male	%	Female	%	Total	%
Total	1,071,697	100.0	130,187	100.0	1,201,884	100.0
Employer	595	0.1	107	0.1	702	0.1
Own Account Worker	1,661	0.2	31	-	1,692	0.1
Employee	1,068,838	99.7	128,642	98.8	1,197,480	99.6
Unpaid Family Workers	4	-	1	-	5	-
Looking for work but never worked before	599	0.1	1,406	1.1	2,005	0.2

2.1.2 Labour Force and its Segmentation

Again according to the 2010 Census, the overall gender ratio for Qatar is 310:100, i.e. 310 males for every 100 females: a consequence of the large numbers of male expatriate workers in the country to meet the burgeoning economy's rapidly increasing demands. For similar reasons, the median age of the total population of Qatar is 31: a consequence of the large portion of men aged 20-59. As already noted, the economically active Qatari workforce is limited to just 5.8% of the total economically active one.

Of the non-economically active portion (72,175 people), 47,616 are female. When students (forming almost 42% of Qatari non-workers) are excluded, we find that almost 37% of Qatari non-workers are homemakers. Of the non-Qatari population, only 118,705 (37,290 students and 75,376 homemakers) are not economically active: less than 10% of the non-Qatari total.

Tables 2.4 and 2.5 illustrate the status classification of Not-Economically Active Qataris and non-Qataris (QSA, 2010).

Table 2.4: Not Economically Active Qataris 15+ by Gender and Status (Source: QSA, 2010, Table-8, p. 14)

Status	Qatari					
	Male	%	Female	%	Total	%
Total	24,559	100.0	47,616	100.0	72,175	100.0
Student	14,711	59.9	15,327	32.2	30,038	41.6
Homemaker	-	-	26,622	55.9	26,622	36.9
Retired	5,754	23.4	2,622	5.5	8,376	11.6
Unable to Work	2,352	9.6	1,328	2.8	3,680	5.1
Not Seeking Work	1,573	6.4	1,715	3.6	3,288	4.6
Other	169	0.7	2	-	171	0.2

Table 2.5: Not Economically Active Non-Qataris 15+ by Gender and Status (Source: QSA (2010), Table-8-1, p. 15)

Status	Non-Qatari					
	Male	%	Female	%	Total	%
Total	22,364	100.0	96,341	100.0	118,705	100.0
Student	19,167	85.7	18,123	18.8	37,290	31.4
Homemaker	-	-	75,376	78.2	75,376	63.5
Retired	-	-	-	-	-	-
Unable to Work	705	3.2	369	0.4	1,074	0.9
Not Seeking Work	1,051	4.7	1,579	1.6	2,630	2.2
Other	1,441	6.4	894	0.9	2,335	2.0

2.1.3 Employment: Employer/Employee Segmentation

When looking at employment from the employer/employee perspective, Tables 2.2 and 2.3 illustrate that in 2010, Qatari entrepreneurs (employers) formed 2.5% of the total economically active Qatari population; whereas almost 94% of that population worked as employees. Meanwhile, around 99.6% of the non-Qatari economically active population worked as employees; the remaining 0.4% worked as entrepreneurs (employers).

2.1.4 Employment: Public/Private Segmentation

Almost 75% of all jobs were within the private sector; and jobs had grown by 290% since 2004, an enormous increase. While the number of jobs in the government sector grew by 125% between 2004 and 2010, the number of Qataris in governmental jobs grew by 134% in the same period; 71% of Qatari employees choose to work within the government/public sector.

Also, while employment of Qataris in the private sector grew by 215%, the number of Qatari females working in this sector rose by 620%. This suggests a labour market orientation among female Qataris that deserves to be assessed and investigated; however, it is not within the scope of this research.

Tables 2.6 and 2.7 illustrate the sector and gender segmentation of economically active Qataris and non-Qataris according to the QSA (2010).

Table 2.6: Economically Active Qataris 15+ by Sector and Gender (Source: QSA 2010, Table-9, p. 17)

Sector	Qatari					
	Male	%	Female	%	Total	%
Total	46,979	100.0	27,108	100.0	75	100.0
Governmental (Ministry/Authority)	32,851	69.9	19,438	71.7	52,289	70.6
Government establishment	6,583	14.0	2,887	10.7	9,470	12.8
Mixed	3,042	6.5	990	3.7	4,032	5.4
Private	3,773	8.0	1,863	6.9	5,636	7.6
Diplomatic/ International	10	-	9	-	19	-
No- profit institutions	28	0.1	39	0.1	67	0.1
Household	55	0.1	5	-	60	0.1
Looking for work but never worked before	637	1.4	1,877	6.9	2,514	3.4

Table 2.7: Economically Active Non-Qataris 15+ by Sector and Gender (Source: QSA, 2010, Table-9-1, p. 18)

Sector	Non-Qatari					
	Male	%	Female	%	Total	%
Total	1,071,697	100.0	130,187	100.0	1,201,884	100.0
Governmental (Ministry/Authority)	38,068	3.6	7,193	5.5	45,261	3.8
Government establishment	25,768	2.4	7,787	6.0	33,555	2.8
Mixed	34,318	3.2	5,174	4.0	39,292	3.3
Private	923,006	86.1	24,087	18.5	947,093	78.3
Diplomatic/ International	1,355	0.1	290	0.2	1,645	0.1
Non-profit institutions	342	-	81	0.1	423	-
Household	48,241	4.5	84,169	64.6	132,410	11.0
Looking for work but never worked before	599	0.1	1,406	1.1	2,005	0.2

2.1.5 Employment: Industry and Profession Segmentation

63.8% of male economically active Qataris and 44.5% of female economically active Qataris work in public administration and defence: compared with 9.3% of male Qataris and 2.6% of female Qataris in mining and quarrying; 3.5% of males and 24.5% of females in education; 2.4% of males and 8.4% of females in human health and social activities.

The numbers of Qatari males working in the information and communication industries were growing, as were those in retail/wholesale. Although mining and quarrying is at the forefront in terms of contribution to GDP, this industry is not the most attractive for many Qataris.

Economically active non-Qataris were working in construction, wholesale and retail; repair of motor vehicles; manufacturing; craft; labouring; operating; and mining and quarrying, whereas Qataris work primarily in professional, clerical and administrative positions (World Bank, 2005).

Tables 2.8 and 2.9 illustrate the distribution of economically active Qataris by gender, economic activity and occupation (QSA, 2010).

Table 2.8: Economically Active Qataris 15+ by Gender and Economic Activity (Source: QSA, 2010 Table-10, p. 21)

Economic Activity		Qatari					
		Male	%	Female	%	Total	%
Total		46,979	100.0	27,108	100.0	74,087	100.0
Agriculture, forestry and fishing	A	44	0.1	2	-	46	0.1
Mining and quarrying	B	4,365	9.3	711	2.6	5,076	6.9
Manufacturing	C	725	1.5	58	0.2	783	1.1
Electricity, gas, water supply and waste management	D	1,415	3.0	248	0.9	1,663	2.2
Construction	E	543	1.2	78	0.3	621	0.8
Wholesale and retail trade; repair of motor vehicles and motorcycles	F	1,518	3.2	356	1.3	1,874	2.5
Transportation and storage	G	530	1.1	171	0.6	701	0.9
Accommodation and food service activities	H	34	0.1	10	-	44	0.1
Information and communication	I	1,606	3.4	645	2.4	2,251	3.0
Financial and insurance activities	J	1,190	2.5	1,296	4.8	1,486	3.4
Real estate activities	K	351	0.7	145	0.5	496	0.7
Professional, scientific and technical activities	L	218	0.5	93	0.3	311	0.4
Administrative and support service activities	M	316	0.7	79	0.3	395	0.5
Public administration and defence; compulsory social security	N	29,995	63.8	12,060	44.5	42,055	56.8
Education	O	1,624	3.5	6,653	24.5	8,277	11.2
Human health and social work activities	P	1,130	2.4	2,284	8.4	3,414	4.6
Arts, entertainment and recreation	Q	636	1.4	247	0.9	883	1.2
Other service activities	R	37	0.1	81	0.3	118	0.2
Activities of households as employers; undifferentiated goods- and services- production activities of households for own use	S	55	0.1	5	-	60	0.1
Activities of extraterritorial organizations and bodies	T	10	-	9	-	18	-
Looking for work but never worked before	U	637	1.4	1,877	6.9	2,514	3.4

Table 2.9: Economically Active Qataris 15+ by Occupation (Source: QSA (2010), Table-11, p. 25)

Occupation	Qatari					
	1997	%	2004	%	2010	%
Total	32,648	100.0	50,282	100.0	74,087	100.0
Legislators, senior officials and managers	3,447	10.6	3,939	7.8	6,263	8.5
Professionals	8,286	25.4	13,155	26.2	20,358	27.5
Associates	2,480	7.6	7,847	15.6	14,369	17.4
Clerks	14,038	43.0	10,931	21.7	21,189	28.6
Service and shop workers	990	3.0	4,902	9.7	2,587	3.5
Skilled agricultural and fishery workers	32	0.1	3	-	31	-
Craft and related trade workers	35	0.1	954	1.9	1,142	1.5
Plant and machine operators and assemblers	188	0.6	1,383	2.8	1,120	1.5
Elementary occupations	3,152	9.7	7,168	14.3	4,514	6.1
Looking for work but never worked before		-		-	2,514	3.4

2.1.6 Females in the Engineering Professions and the Oil and Gas Industry

Although the focus of this research is on engineering graduates' transition into the labour market and the role of the education-industry partnership in facilitating this and enhancing their engagement with the labour market, it is worth looking at the gender segmentation of the engineering graduates in the labour market in general, the oil and gas industry in particular, as this may help establish a clearer concept of these graduates. The gender aspect might also have an impact on ethical and practical considerations when it comes to designing the research instrument, as discussed in Chapter 5.

In terms of overall employment based on gender, almost 84% of Qatari males and 82% of Qatari females are working in the government sector. Only 9.3% of

Qatari males and 2.6% of Qatari females are in the mining and quarrying industry: a very low percentage.

There seem to be two main factors underlying the low percentage of females in mining and quarrying: First, engineering disciplines form the dominant speciality within this sector. Engineering is not at all the preferred choice of study for Qatari females: historical data of Qatar University (QU) indicate only 302 Qatari female engineering graduates of a total of 19,002 Qatari female graduates for the period 1976-77 to 2009-10; compared with 721 Qatari male engineering graduates of a total of 6,074 Qatari male graduates for the same period (Institutional Research and Data Warehouse (IRDW) (2011c, p. 15).

Second, mining and quarrying does not seem to be the preferred industry for Qatari female engineering graduates, as it has a reputation as a tough, demanding working environment, with most facilities located in relatively remote areas.

In other words, there is an issue with both engineering as a choice of study for Qatari females; as well as one with their choosing mining and quarrying. The issue of female under-representation in engineering is drawing the attention of many policymakers, academics and employers. Sulaiman and Al-Muftah (2010) suggest that:

> 'Unfortunately, gender bias is still customary, which hinders women from entering the engineering profession. The obvious solution is to highlight this issue and to attract and retain more women into engineering programmes and this task has been undertaken by companies, professional organizations and Qatar University', (Sulaiman and Al-Muftah, 2010, p. 507).

This argument, that traditional attitudes hinder Qatari women from entering the profession, seems reasonable; but may not provide the whole answer, given a similar problem across much of the world. Working environment may be a major reason for this. Sulaiman and Al-Muftah confirm that 'under-representation of women in engineering has received a great deal of attention, but remained limited largely to a Western context' (Sulaiman and Al-Muftah, 2010, p. 504).

One more factor that may preclude many females from considering engineering is the overall perception pertaining to career pathways (again, not necessarily related to Qatar only). In this regard, Mathur-Helm (2006) suggests that:

> 'The glass ceiling, considered a myth by many, is real and is nurtured by the organizational culture, policies and strategies and is highly presided by the masculine values and styles, besides women's own inadequacies such as: their decisions, qualifications and skills, career plans and career prospects. Thus many women jump off the career wagon frustrated and disillusioned before it reaches the top echelons', (Mathur-Helm, 2006, p. 318, cited in Morris, 2010, p.71).

This may be especially apparent when we compare the positions and career progression which women are normally able to achieve in Human Resources (HR), community service or education to those in industry. This perhaps tallies with the views of Emirates National Oil Company (ENOC) Career Development Manager, Saba Al Tukmachy:

> 'Money is not always the driver and the important factor, but what really is important is that we provide the right work environment, the right conditions, the flexibility in the working hours, the understanding of the female nature and at the same time not risking

the responsibilities and the business requirements. So it's mainly the work environment and the career growth and the path more than the financial aspect' (Al Tukmachy, 2012).

This underscores the factors which women need to consider in order to successfully cope in this industry:

'When we recruit national engineers, for example, and they're female, so we make sure that there is certain technical allowance given to them and also there are certain coveralls and uniforms that suit the culture and suit their nature. And also the working hours are not as extended as their male colleagues and there are certain delimitations in their job tasks itself; that we know that, for example, they can't stay long in the sun or they can't really climb the cylinder or things like that. So we take this into consideration and by that, when we recruit them, we explain it to them in the first process. However, it does not limit them from growing and from gaining competencies in other fields and in other parts of the function itself' (Al Tukmachy, 2012).

This aspect (balancing between modernity and customs) shall be further discussed in section 2.2, as we explore the key features of Qatar National Vision 2030, which emphasizes the imperative necessity of balancing five major challenges: the first of which involves modernization and tradition; and also highlights the importance of social care and protection through 'strong cohesive families with high moral and religious values' (General Secretariat for Development Planning (GSDP), 2009, p. 7).

Meanwhile, according to the 2010 Census, 6.9% of economically active female Qataris were 'looking for work, but never worked before', compared to 1.4% of economically active male Qataris: which may imply a question mark about the

labour market ability to effectively utilize scarce national resources, particularly in the case of Qatari women. This question will be one of the main areas to be investigated by this research.

2.1.7 The Educational Perspective

The Qatari illiteracy rate was reduced by half between 2004 and 2010, with significant increases in the numbers of Qatari students in secondary and post-secondary education. This was in addition to increased numbers of Qataris attaining university degrees/post-graduate degrees between 2004 and 2010: a clearly positive development.

Figure 2.1 and Table 2.10 below illustrate the improvement in educational attainment in the period 1997-2010 (2010 Census).

Figure 2.1 Qataris 10+ by Educational Attainment (Source: QSA, 2010, p. 7)
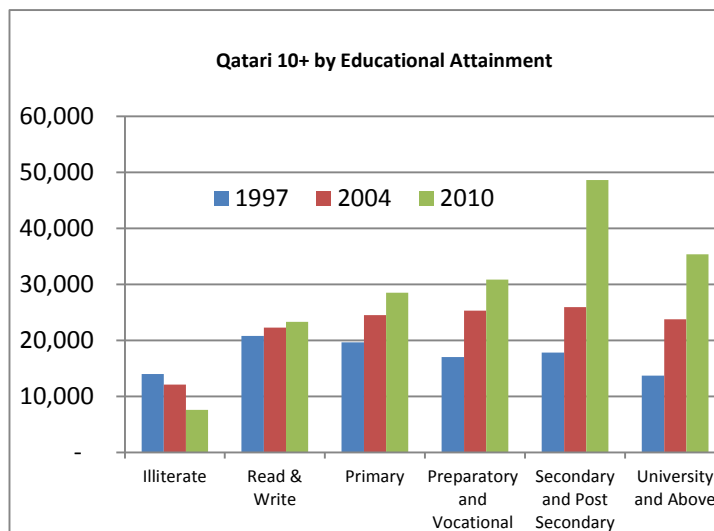
Table 2.10: Educational Attainment 10+ Years by Nationality (Source: QSA (2010),Table-5, p. 8)

Level	Qatari						Non-Qatari	
	1997	%	2004	%	2010	%	2010	%
Total	103,048	100	133,913	100	174,279	100	1,357,563	100
Illiterate	14,016	13.6	12,108	9.0	7,583	4.4	46,995	3.5
Read and Write	20,787	20.2	22,305	16.7	23,287	13.4	343,798	25.3
Primary	19,679	19.1	24,530	18.3	28,497	16.4	320,211	23.6
Preparatory and Vocational	17,024	16.5	25,286	18.9	30,859	17.7	175,584	12.9
Secondary and Post-Secondary	17,849	17.3	25,923	19.4	48,646	27.9	288,872	21.3
University and Above	13,693	13.3	23,761	17.7	35,353	20.3	182,033	13.4
Other					54	-	70	-

Looking at the overall population ratios gives a generally positive indication; however, when we look at the figures for QU (the main national university of Qatar), the picture might not be so positive, especially regarding Qatari male-related trends and statistics.

According to QU statistics, between 2008-09 and 2009-10, the graduation rates for Qatari students decreased by 5%; while those for GCC, Arab and foreign students increased by 28%, 20% and 50% respectively (IRDW, 2011a, p.1).

Also worth noting are the significantly high numbers of graduates in Education; Arts, Humanities and Social Sciences; and Business and Economics, when compared with the numbers in Engineering and Technology: which contributes significantly to a lower percentage of Qatari males and females working in the most significant sector in Qatar, as illustrated in Table 2.11.

Table 2.11: Total QU Graduates by College, Nationality and Gender (1976-77 to 2009-10) - (Source: IRDW (2011c), p. 1)

	Qatari		Non-Qatari		Grand Total
	Male	Female	Male	Female	
Education	1,145	8,191.0	1,319	2,053.0	12,708
Humanities and Social Sciences	1,043	2,884.0	400	488.0	4,815
Science	554	1,405.0	606	885.0	3,450
Arts and Sciences	323	2,029.0	100	602.0	3,054
Sharia and Islamic Studies	432	1,612.0	280	172.0	2,496
Engineering	721	302.0	463	176.0	1,662
Business and Economics	1,185	1,643.0	288	294.0	3,410
Technology	486	793.0	5	3.0	1,287
Law	185	143.0	27	30.0	385
Grand Total	6,074	19,002	3,488	4,703	33,267

2.1.8 Some Key Features of the Qatar Economy

The Qatar economy has proved to be one of the fastest-growing economies over the last 15 years, not only within the Gulf region, but worldwide. The government is taking a leading role in this economic growth. 'The heavy investment in liquefied natural gas (LNG) production capacity and increases in LNG production over the last couple of years have been the main drivers of Qatar's robust growth' (QSA, 2012, p. 4). Thus Qatar has capitalized on returns from its expanding production levels of gas-related products, LNG and condensates, coupled with increases in hydrocarbon prices. Both factors have pushed the nominal GDP of the country to hitherto wholly unseen levels. Table 2.12 provides detailed information about Qatar's GDP by economic activity for 2006-2011: the average contribution of the oil and gas industry exceeded 50% of total GDP over that period, and reached 57% in 2011.

Table 2.12: Gross Domestic Product by Economic Activity at Current Prices, 2006 – 2011, (Unit: Million Q.R), (Source: Extracted from QSA, 2012, Table-1, p. 24)

Sr.	Economic Activity	2006	2007	2008	2009	2010*	2011*
	GROSS DOMESTIC PRODUCT BY ECONOMIC ACTIVITY AT CURRENT PRICES 2006 – 2011 (Million Q.R.)						
1	**Agriculture and Fishing**	270	319	523	439	534	582
	- Per cent of Total	0.1	0.1	0.1	0.1	0.1	0.1
2	**Mining and Quarrying**	117,469	150,014	230,312	159,467	239,745	364,458
	- Per cent of Total	53.0	51.7	54.9	44.8	51.7	57.7
3	**Manufacturing**	20,617	26,810	44,853	33,570	49,185	62,689
	- Per cent of Total	9.3	9.2	10.7	9.4	10.6	9.9
4	**Electricity and Water**	1,569	1,820	2,063	1,794	2,070	2,565
	- Per cent of Total	0.7	0.6	0.5	0.5	0.4	0.4
5	**Building and Construction**	10,846	15,925	27,199	25,522	24,144	23,325
	- Per cent of Total	4.9	5.5	6.5	7.2	5.2	3.7
6	**Trade, Restaurants and Hotels**	14,789	20,848	23,429	29,839	32,309	34,920
	- Per cent of Total	6.7	7.2	5.6	8.4	7.0	5.5
7	**Transport and Communication**	6,885	8,697	14,775	16,212	18,275	21,593
	- Per cent of Total	3.1	3.0	3.5	4.6	3.9	3.4
8	**Finance, Insurance, Real Estate and Business**	29,371	41,982	51,580	58,099	62,119	73,427
	- Per cent of Total	13.2	14.5	12.3	16.3	13.4	11.6
9	**Social Services**	1,727	3,004	3,461	4,149	4,347	4,883
	- Per cent of Total	0.8	1.0	0.8	1.2	0.9	0.8
10	**Government Services**	19,480	21,955	26,335	32,106	35,814	49,236
	- Per cent of Total	8.8	7.6	6.3	9.0	7.7	7.8
11	**Household Services**	1,237	1,565	1,661	1,827	1,881	2,025
	- Per cent of Total	0.6	0.5	0.4	0.5	0.4	0.3
12	**Imputed Bank Services Charges (FISIM)**	-5,352	-6,734	-10,149	-10,152	-10,953	-12,111
	- Per cent of Total	-2.4	-2.3	-2.4	-2.9	-2.4	-1.9
13	**Import duties**	2,703	3,946	3,540	3,114	4,019	4,018
	- Per cent of Total	1.2	1.4	0.8	0.9	0.9	0.6

According to the IMF, Qatar was ranked 2nd worldwide in terms of per capita GDP, with a nominal $98,329 in 2011. This is expected to reach $108,467 by 2013 and $124,310 by 2017: compared to figures of $37,663 and $43,534 for the UK, and $51,058 and $59,708 for the USA, respectively, for the same years (IMF, 2012).

It is further expected that hosting the FIFA World Cup in 2022 will boost the Qatari economy, given the significant construction developments expected in terms of sports facilities, transport, infrastructure, hotels and restaurants. From the oil and gas employers' perspective, this presents an additional challenge for their organizations to attract new engineering graduates and sustain their current engineers, when we consider that the new transport and infrastructure projects might provide numerous attractive employment opportunities for experienced and non-experienced engineers. This question shall be further explored in subsequent chapters.

Thus far, we have discussed key features related to the Qatari population, labour market, economy and education. These have perhaps triggered a question about the country's orientation towards enhancing the capacity of its scarce human elements. Consideration of this would help pave the way towards a better understanding and appreciation of the background of the key issues to be discussed in the next two chapters: particularly the evolving debate concerning school-to-work transition, education-industry partnership, graduate employability and engagement with the labour market, career education, skill formation and workplace learning.

The following section sheds light on the Qatari approach to national development, with a focus on the human dimension of this developmental approach.

2.2 QATAR'S APPROACH TO NATIONAL DEVELOPMENT

Under the Qatar National Vision 2030, the Qatari government states:

'Comprehensive development is our main goal in striving for the progress and prosperity of our people' (GSDP, 2008, p. 1). This represents the main developmental approach of the state.

2.2.1 Qatar National Vision (QNV) 2030

The QNV 2030 sets a framework for the desired future of Qatar and its people as well as the main goals to be achieved. It defines major long-term outcomes, allowing for comprehensive medium-term national strategies to be established, developed and implemented in order to attain these goals over a specified time frame: aiming to end in 2030 with Qatar established as an advanced, developed country, able to sustain such a position.

> 'Qatar's sound management of its bountiful hydrocarbon resources will continue to secure improvements in standards of living; however, an improved standard of living cannot be the only goal of a society. To remain true to its values, Qatar must balance five major challenges as illustrated in the QNV 2030 document' (GSDP, 2008, p. 3).

These challenges are:

- Modernization and preservation of traditions
- The needs of this and future generations
- Managed growth and uncontrolled expansion
- The size and quality of the expatriate labour force and selected path of development
- Economic growth, social development and environmental management

As illustrated in the GSDP (2009), the QNV is based on four major pillars from which to achieve the planned development:

1. Human Development Outcomes

Striving for an educated population; world-class education; physically and mentally healthy population; and a capable, motivated workforce

2. Social Development Outcomes

Striving for social care and protection, a sound social structure, and international cooperation.

3. Economic Development Outcomes

Striving for sound economic management, responsible exploitation of oil and gas, and sustainable economic diversification.

4. Environmental Development Outcomes

Striving for balance between development needs and protecting the environment.

These represent the long-term aspirations for the country and its people, which can only be achieved by committed, educated, and determined human capital.

It is noted that the QNV 2030 'builds on Qatar's Permanent Constitution which promotes moral and religious values and traditions' (GSDP, 2009, p. 2), and is based on social development that strives for 'strong cohesive families with high moral and religious values' (GSDP, 2009, p. 7). This seems to take quite a similar approach to that of neighbouring countries such as the UAE, where 'religious awareness underpins all aspects of social policy' (Findlow, 2000, p. 46); or Kuwait, where education aims to instil into students the meanings of 'the love of God, their country, and their culture and traditions' (Bustan, 1994, p. 430, cited in Findlow, 2008, p. 343).

Thus while the government encourages modernity, it also urges the maintenance of the moral and religious values of the nation: which form a safe, profound platform on which to build human, social, economic and

environmental developments.

Accordingly, 'Intrinsic Values', as will be discussed further in Section 4.5, such as the 'love of God, the country, the culture and traditions' or the 'feeling of belonging' might be something of significant value to think of while considering any form of skill formation or capacity building, as such values might be a form of creating motivation among people.

2.2.2 Qatarization as a Tool for Building National Human Capacity

The QNV 2030 identifies Human Development as the first pillar towards overall national development. The vision sets out a clear commitment towards building and enhancing national human capital. Decision-makers recognize that:

> 'An improved human capital base will help Qatar to become more competitive and to better manage the multiple challenges of globalization. This will require investments in capacity building to ensure a motivated and innovative workforce' (Al-Mansoori, 2010).

As an essential component of national human capital development and enhancement, Qatarization has become a key strategy. It was initiated in the 1980s by the oil and gas industry, followed by the government sector, with the aim of increasing the number of Qatari nationals employed in these; however, by 2000, a new concept became concerned with the development of Qatari nationals in terms of knowledge, skills and competencies.

The QNV 2030 has adopted a much more comprehensive, quality-oriented concept of Qatarization, viewing it as a continuous process to assist economically active Qataris in integrating with the labour market. It

conceptualizes Qatarization as a localization strategy and essential means of upgrading local socio-economic assets through improved employment and employability. Accordingly, the essence of Qatarization is evolving towards a strategy of building national human capacity in terms of education, competence and qualifications, adding value in every aspect.

Admittedly, this conceptualization has not taken hold among some employers, who seem intent on focusing merely on 'numbers' in their Qatarization policies, rather than the 'essence of the Qatarization strategy' (Al-Mansoori, 2010; Al Muftah, 2010). This is a pressing question for policymakers and decision-makers: whether policies, systems and procedures will lead the human capital developmental approach, or whether something 'from within' the people might be required. This question is again further discussed in later chapters.

2.3 SUMMARY

In recent years, Qatar has achieved a hitherto undreamt of economic position; but that brings with it a great necessity for the country and its people to have the strategies, tools and methodologies and, above all, a strong human element able to sustain and even improve this.

The country's great reserves of hydrocarbons and the oil and gas industry are in great need of talented, committed, and bright nationals to take the lead in this vital segment of the current and future economy. The country as a whole and oil and gas industry in particular cannot afford any underutilization of its scarce population, or any of its elements.

This re-emphasizes the originality of this research, and the value it adds to the

existing body of knowledge by identifying the role of the education-industry partnership in facilitating engineering graduates' transition and enhancing their engagement into the labour market: not due to concerns about their ability to find a job, but over the labour market's ability to effectively utilize this important element of the country's scarce human capital.

After examining key features of Qatar's population, labour market, education, economy and national developmental approach, we can also see that having effective human developmental strategies in place is imperative for the state and its people; and that the Qatar National Vision provides a general framework from which these can be derived. It is imperative that the tools and mechanisms are in place to ensure that the implementation of these strategies proceeds in line with the essence of the national vision, not with its more superficial features.

Chapter 1 introduced the thesis and provided us with a brief overview of the research background, while Chapter 2 presented an overview of the context within which the research is being performed. The following Chapter presents a review of the main terms and concepts associated with the literature surrounding the main research question taking this thesis forward towards developing the theoretical framework for the research.

PART 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

CHAPTER 3: LITERATURE REVIEW

3.0 INTRODUCTION

This chapter presents a review of the main terms and concepts associated with the literature surrounding the main research question. It will begin with a definition of school-to-work transition (STWT), before discussing some of the key issues associated with this process: such as the stages of transition, the graduate labour market, graduate employability and engagement, as well as career development. It also focuses on successful models of collaboration between education and industry: which remains lacking in the Qatari oil and gas industry, and this thesis seeks to help remedy through its recommendations to policymakers and for future research, based on the findings.

Interest in the research question has arisen from concern about the difficulties which newly graduating Qatari engineers face in the labour market. The previous chapter noted an apparent improvement in levels of education in Qatar, encouraged by new educational policies and inspired by the state's leadership vision; however, as the demand for skilled graduates has continued to increase, the supply of skilled graduates remains unable to meet this.

The process of Qatarization helped begin the partnership between employers and policymakers, and more latterly, between employers and educators; yet the capacity of these partnerships to remedy the lack of local skills and help correct the occupational pathways taken by newly graduating Qataris heading from university to working life has remained limited, and perhaps intangible in many cases. These issues have led the researcher to address the role of the education-industry partnership in helping newly graduating Qatari engineers.

Theoretically, the main parties involved in the school-to-work transition process are educators, employers, graduates themselves, and labour market policy-makers. However, we may find that the society within which these parties are interacting forms a larger frame that affects the overall transition process. Meanwhile, looking at each of these factors/stakeholders as a stand-alone entity might not provide a clear picture of the act/role of such a stakeholder within the bigger picture of an individual's career life.

3.1 SCHOOL-TO-WORK TRANSITION (STWT)

The next two sections will discuss the definition of STWT and the debates concerning this; and will also discuss and articulate the stages of transition based on the definition adopted within this research.

3.1.1 Defining the STWT

Defining the STWT is a critical element, as it will determine many of the key aspects of the research itself. For instance, identifying the stages of transition enables the selection of potential sample groups for the study; the most appropriate research methodology and instruments to be employed are related to the definition adopted.

Most studies define the transition as 'the length of time between the exit from education, either upon graduation or early exit without completion, to the first entry into fixed-term or satisfactory employment' (Matsumoto and Elder, 2010, p.3). A very similar definition is then offered by these authors as the basis for their own study: 'The school-to-work transition is defined as the passage of a young person (aged 15-29 years) from the end of schooling to the first fixed-

term or satisfactory employment' (Matsumoto and Elder, 2010, p.4).

This, however, would require some customization to tally with the purpose of this research and reflect the researcher's own understanding of the key components and aspects of the STWT process. A definition was needed which would focus on a specific category of youth, for a specific industry, in a specific country; but ideally, it should be one that could be adapted and could reasonably serve in other contexts.

At the early stage of this research, the following definition of the STWT was considered by the researcher:

'The period of time between completing the first university engineering degree and the first fixed-term employment within the oil and gas industry'.

With the above definition, the researcher does not adopt the International Labour Organization (ILO)'s choice of 'satisfactory' or 'decent' employment as an end point of transition; despite concurrence that for stable employment to be present, satisfaction needs to exist.

Meanwhile, employment satisfaction might not be a straightforward thing to achieve or reach: perhaps not even within five or ten years of working experience, taking into consideration the many subjective factors that would have to do with such satisfaction. In a Qatari context, this seems even more critical in light of increasing job offers within the labour market, especially for engineering professions, due to the scarcity in supply.

Ultimately, as the research was evolving, and in order to have a definition for the STWT that can be reasonably applied within the local as well as other contexts, the following refined definition for the STWT was adopted:

'The period of time between completing the educational stage and graduation to the first reasonably stable and fulfilling engagement within the labour market'

This definition is based on three key elements, gauged with a fourth one in order to set the end point of transition. The three elements are stability, satisfaction and engagement; gauged by the term 'reasonably'.

To elaborate: stability, an element which is quite important for an individual, is a substitution for the 'fixed-term' of Matsumoto and Elder (2010). Fixed-term terminology might not be the 'best fit', especially with labour market conditions that can be best described to be 'non-stop changing'; thus the concept is of stability that provides someone with a 'reasonable level' of job and income security, but does not necessarily provide any guarantee of fixed-term or long-term employment.

Satisfaction is another key element for the individual: this supports stability and allows the individual to perform better and engage with the work environment.

At the same time, this in fact triggers a question about most current definitions of the STWT, including Matsumoto and Elder (2010)'s: which is the ILO choice, as they tend to be employee-oriented. But they do not seem to take into account the interests of other stakeholders in employment: namely, the employer, the state, society, and even educators: who might not be satisfied if an individual is not 'reasonably engaged' with the work, even if they have fixed-term, secure or stable satisfactory employment.

For example, would it be reasonable to consider the STWT process of a

graduate as successfully completed if the effectiveness of their engagement in the first fixed-term and satisfactory form of employment is questioned? Accordingly, 'engagement' is a key element with which to confirm the end point of the transition, allowing for other key stakeholders' and concerned parties' interest to be maintained.

Having these three elements 'open-ended' might not serve the purpose, and might keep the definition itself open: thus, reasonability was introduced as a fourth gauging element. This would minimize the influence of the 'subjectivity' of an individual or any of the concerned parties, and would allow for considering the various socio-economic factors of the community, industry or state at any point of time, in a reasonable, rational and acceptable manner.

In sum, the definition adopted does follow that of STWT used by most researchers (Matsumoto and Elder, 2010); but adds 'engagement' as a third key element, and 'reasonable' as a 'level control meter' for all three elements.

3.1.2 Stages of Transition

In their study, Matsumoto and Elder (2010, p.4) classify the transition into three stages, according to their definition of the STWT. These stages are:

1. Transited

2. In-transition

3. Transition not yet started.

This classification tallies with Pastore (2008) in his study of STWT in Mongolia: both Matsumoto and Elder (2010) and Pastore (2008) seem to adopt the ILO definition of STWT completion, as ILO recognizes completion as being once

'decent work' is attained.

In turn, ILO defines 'decent work' as work that is productive, generates adequate income and guarantees rights at work and social protection (Pastore, 2008, p. 68); although concerns about the 'fixed-term' aspect are of higher importance to many researchers, as illustrated by Garrouste and Loi (2011).

The above classification of transition stages goes under two main elements, 'fixed-term' and/or 'satisfaction'. The refined definition of STWT, with its four key elements, can serve the purpose of addressing the STWT in local as well as other contexts.

Using the adopted definition of the STWT, the following distinct stages are identified:

1. Pre-STWT Stage: Dealing with the period prior to starting the STWT.

2. STWT Stage: Dealing with the transition stage.

3. Post-STWT Stage: Dealing with the period following the successful completion of the STWT stage.

As this research is focused on engineers within the oil and gas industry, the following key stages for engineers are identified:

1. About to start transition: engineering students about to graduate from colleges and join the labour market, normally in the 4th or 5th year at engineering school (addressing the pre-STWT stage);

2. In-transition engineer: an engineer who has recently started a job in the oil and gas industry, normally in their first two years in the labour market, but yet to be considered as having attained a reasonably stable and satisfactory engagement in the oil and gas sector (addressing the STWT

stage);

3. Transitioned engineer: where an engineer has achieved a reasonably stable, satisfactory engagement in the oil and gas sector, a stage normally reached 2-3 years after joining the industry by most graduates (addressing the post-STWT stage).

These three stages do not differ from those identified by Matsumoto and Elder (2010), Pastore (2008) and other researchers who adopt the ILO definition of STWT. There is not much to argue about when it comes to the 'starting point' of STWT or the 'in-transition' stage; however, a significant difference does appear when defining the 'end point' of STWT.

Having now defined the STWT and identified its stages, the following sections shall discuss key issues associated with the STWT process, such as the graduate labour market, graduate employability and engagement, career development as well as forms and approaches of education-industry partnership in order to move forward towards developing the theoretical framework (set out in Chapter 4) against which the research shall be undertaken.

3.2 GRADUATE LABOUR MARKET

Recent decades have overseen considerably wider access to higher education; however, labour markets do not seem to have responded positively to the increased number of graduates (Kivinen, 1997; Pitcher and Purcell, 1998; Tomlinson, 2007; Cranmer, 2006; Mason et al. 2009; Keep 2102). Many studies indicate a tendency towards fewer opportunities worldwide: albeit there are differences from one labour market to another and from one time to another.

Generally, investing in higher education in terms of time, effort and money, has been viewed as one for the nation in general and the individual in particular: 'Through investments in brain-power, it was thought that nations could deliver prosperity, justice, and social cohesion, companies could develop world-class employees, and individuals could secure a better future for themselves and their family' (Brown et al. 2011, p. 15). This school of thought is now fading, as many graduates exit higher education only to struggle to find their way into and through the labour market. Graduates' ability to find suitable employment is no longer a foregone conclusion: a problem which needs to be resolved by educators, employers and policymakers, as shall be explored further in forthcoming sections.

Pitcher and Purcell (1998) explore the development of skills and competences in different disciplinary areas and the anticipated career trajectories of final-year undergraduate students. The findings reflected growing concern among graduates about the labour market's preparedness to take them into appropriate jobs which matched the skills and competencies they had gained; but also indicated some variance among students' responses, according to subject studied. Such variances were surely reasonable, as some subjects might command better opportunities within the labour market than others.

When compared with Tomlinson (2007), whose study took place nine years later, the overall understanding of students' perceptions remains valid: although Pitcher and Purcell (1998) looked at matters from a subject perspective, while Tomlinson (2007) identified students' orientations and attitudes, without linking them to the subject of study.

Nevertheless, it can be argued that Pitcher and Purcell (1998), Tomlinson (2007) and similar studies (Keep 2012) have tackled the 'problem' from one side only: the students' perspective. By contrast, this thesis' view is that the problem is multi-sided; meaning that taking a snapshot of the whole scene at a certain point of time would establish a better understanding of the problem and underlying causes. Addressing the problem from the perspective of key stakeholders, including employers, educators and other policymakers, will help provide for a more appropriate assessment of potential solutions.

Table 3.1, based on Pitcher and Purcell (1998)'s analysis, summarizes students' orientations and attitudes towards the labour market based on their subject of study: which will be useful for comparison with engineering students' orientations in a Qatari context later in section 6.1.3.

Table 3.1: Students' Expectations After Completing Their Course
 (Source: Adapted from Pitcher and Purcell (1998), Table 1, p. 91)

Percentages

	Employment related to longer term career	Temp work while considering options	Temp work to pay off debt	Full-time higher degree	Vocational training	Travel or time out	Other/don't know	*Base*
Arts / Humanities	21.9	27.7	7.3	18.7	12.7	10.4	7.7	*743*
Modern Languages	24.9	32.2	7.6	8.3	12.1	10.0	8.3	*289*
Social Sciences	28.1	29.0	8.5	14.8	5.1	13.2	7.6	*752*
Law	23.6	10.5	3.7	12.2	39.9	7.8	8.1	*296*
Business Studies	50.4	22.1	5.6	7.9	2.1	11.1	5.4	*709*
Maths/Computing	47.7	17.1	2.8	16.0	4.5	9.2	7.2	*426*
Natural Sciences	27.9	22.6	6.7	23.2	5.3	12.0	7.7	*1026*
Engineering/Technology	62.8	14.4	3.5	8.0	1.8	7.3	8.2	*564*
Interdisciplinary	32.3	28.3	12.6	12.2	4.7	11.4	10.7	*254*
Total	35.3	23.2	6.4	14.6	7.8	10.6	7.6	*5059**

* excludes missing responses

An interesting finding here is that students in engineering/technology and math/computing, as well as business studies, displayed the highest level of aspirations/expectations with regard to 'Employment related to longer term career' compared to other fields/subjects of study such as the social sciences and humanities. This leaves us to wonder whether that was due to:

a. The nature of the subjects and/or quality of education in these (doubtful, as the study covered final year students in 1996 across 21 higher education institutions in the UK and was not related to a single institution);

b. The particular characteristics of students in these subjects;

c. The availability of more opportunities in the labour market for graduates in these subjects: that is, higher demand for these disciplines (which could be one of the most influencing factors).

The debate about the potential factors resulting in such varying orientations among students leads us in turn to wonder whether it is about the educational institutions, the students, the employers, the labour market; or perhaps, all these factors, but maybe with varying contribution levels?

Pitcher and Purcell (1998) also suggest that while the majority of students in their sample displayed a high degree of flexibility in their approach to the labour market, the labour market appeared less flexible in its ability to take advantage of the full range of new graduates: which continues to be an area of concern for economies, governments, societies and graduates. There is still a large question mark over labour markets' preparedness to maintain 'adequate access for today's graduates, when they present themselves with the 'assumed gate

pass' or suggested 'key to employability' of (Pool and Sewell 2007; Keep 2012).

3.2.1 Today's Labour Markets and Today's Graduates

The argument about the labour market's preparedness to effectively utilize supply from the higher educational institutions, and offer reasonable opportunities for those graduates, has attracted the attention of many researchers Keep (2012). Kivinen (1997) looked at higher education as an 'insurance policy' that minimizes the risks of an individual within the labour market, but does not necessarily provide any guarantee of a certain level of income or position. This is in line with the metaphor proposed by Sorokin (1927; cited in Kivinen, 1997, p. 443), that 'education was a "social elevator" running from the bottom to the top of the "social building", but transferring different numbers of people to different floors'.

Kivinen (1997) surmised that this could owe to different factors associated with graduates' employability:

1. Internal factors that have to do with the individual, such as personal characteristics, desires and skills;

2. External ones that have to do with the surrounding environment, such as education, labour market and other social, economic and political circumstances.

This thesis argues that quality education is more of an essential prerequisite for today's graduates than ever; but without graduates' own ability and flexibility to develop themselves and adapt to the market, and without the labour market ability and flexibility to take advantage of the increased number of graduates, the problem of graduates' employability will remain, and indeed grow.

In this context, 'employability' should not be looked at as 'securing a job', as this would be quite misleading and does not reflect the real ability of graduates to actively engage with the labour market or that of educational institutions to meet its expectations; and/or the ability of employers to effectively capitalize on this 'costly human capital'.

3.2.2 Skill Supply and Demand in the Graduate Labour Market

From the perspective of employers, 'employability' often seems to refer to 'work-readiness' (Mason et al. 2009, p.1), requiring graduates to have the necessary skills, competencies, attitudes and other qualities which enable them to engage effectively with their work and be productive. However, from the perspective of educators and graduates, it may seem to refer to 'job-offerings and adequacy' in terms of expecting the labour market to have the capacity to 'suitably accommodate' the graduates being supplied to it.

Kivinen (1997) studied and analyzed the changing links between higher education and labour markets under four headings:

    a. The academic community

    b. The state

    c. The business community

    d. The population at large

Students were not considered by Kivinen (1997) as an interest group, but they comprised the 'end product', the 'quality' of which was at stake. This classification is open to question: it may imply that graduates, being the 'end product', do not have much to do with their own preparedness and employability.

Conversely, Andrews and Higson (2008) analyzed this by placing major emphasis on the role of graduates in contributing towards their own employability. Kivinen (1997)'s study illustrates that the business community expects university to equip graduates with adequate 'tools/skills' to minimize the 'learning curve' at the workplace, whereas Andrews and Higson (2008) identified key 'transferable' soft skills and competencies integral to graduate employability; however, this raised further queries about the role of the different 'concerned parties' with regard to developing the skills and competencies of the graduates.

It seemed that some employers or business communities were expecting 'ready-made' graduates, fully equipped with all necessary skills and competencies: reducing or removing the burden from the shoulders of these employers, while transferring it to the shoulders of the educational institutions as well as the graduates themselves as suggested by Keep (2012).

This is apparent in the absence (or relaxation) of two important factors: the legislation and regulations pertaining to the role and responsibility of the employers with respect to training and development; and the social accountability of these employers/organizations and feeling/belief that they are only there to minimize expenses (including those related to training and development) and maximize their own monetary profits, especially when there is a supply of graduates that exceeds labour market demand.

3.2.3 Recruitment and Selection in the Graduate Labour Market

Recruitment and selection of graduates by employers continues to be an area of concern when considering the graduate labour market and graduates'

employability. A theoretical model of selection strategies developed by Dafou (2009) showed that, regardless of the different selection methods used by organizations to assess candidates for employment, most of the decisive information about applicants was extracted from aspects of their educational experience and information: which referred not only to technical expertise but also to capacity, personality and motivation. Dafou (2009) concluded that there is a set of qualities that employers are normally seeking while assessing applicants: 'These qualities can be divided into two categories. One category refers to paper qualifications and the second to the substantive qualities that people possess as a result of their education, training or work experience' (Dafou, 2009, p. 91). This seems in accord with Andrews and Higson (2008) with regard to the key 'transferable' soft skills and competencies integral to graduate employability.

Dafou found that some employers referred to assessing candidates 'from a technical perspective' and a 'human perspective'; others referred to 'technical knowledge' and 'appropriate personality'; still others to 'capability', 'intelligence', 'personal match', 'cultural match', 'interests', 'motives' and so on; however, when examining the developed model (Dafou, 2009, p. 95), it can be argued that despite looking at two main perspectives, the human and technical ones, the model seems to heavily emphasize the latter.

The model pays a great deal of attention to factors such as type of institution, institution reputation, locus of institution, degree class, length of study, subject of study and degree of specialization, which can only be seen as more to do with paper qualifications rather than personal qualities; while it seems that paper qualifications, albeit important, do not represent the only criteria used by

many employers to assess and select candidates.

Nevertheless, the overall argument of Dafou in classifying the sought qualities into two main categories seems reasonable; although it can also be argued that different labour markets or different industries might pay different levels of attention to the various sub-categories within these two main categories.

This is supported by a survey conducted by GulfTalent.com (2011) in cooperation with a number of universities in Saudi Arabia. This revealed that most graduates believed that relevant work experience (e.g. internships) was the most important factor determining their chances of employment. Other factors perceived to be important included English language proficiency, relevant course of study and personality.

One interesting finding was that 25% of respondents believed that personal connections – 'wasta' – are a key factor in the employer's recruitment process (GulfTalent.com, 2011, p. 18): which apparently neither educational institutions nor graduates themselves can do anything about, as it is intrinsic to the labour market.

3.3 GRADUATE EMPLOYABILITY AND ENGAGEMENT WITHIN THE LABOUR MARKET

The increased supply of graduates on the one hand, and continually changing requirements of the labour markets on the other, has affected the way many graduates or about-to-graduate students perceive the question of employability and career development.

In general, seeking a 'competitive advantage' which can enable an individual to

be privileged among many others within the labour market has become a significant concern for many adults as well as new graduates. The pressure to attain and sustain a competitive advantage may start much earlier than university – even from birth, pushed by ambitious parents (Brown et al., 2011, p. 11). Pursuing a high income or good position might not necessarily be the only motive for seeking a competitive advantage; there may be other motives (with higher values) for some, such as self-fulfilment (Ashton and Green, 1996, p.3).

Within this dialogue, the term 'employability' seems to be the password which opens the doors of opportunity. So what is employability and what is it about?

3.3.1 Graduate Employability from Different Perspectives

Andrews and Higson (2008) clarify that defining 'employability' itself is not straightforward, as different parties might look at it from different perspectives. Some parties tend to look at employability as a measure of graduates' ability to get engaged into the market and become active elements within it; while others might view it as a measure of the available supply of job offers compared to educational institutions' supply of graduates.

Some might tend to even look at 'employability' as the opposite of 'unemployment', and over-simplify things by considering employability in terms of the figures and percentages of graduates able to 'secure a job' within the first six months of graduation. This is not only an over-simplification but wholly misleading. Pool and Sewell (2007) criticize the way in which some higher educational institutions perceive employability through 'first destination surveys': as these provide very vague indications and do not tell us much about

the ability of these graduates to utilize the knowledge gained in their studies.

It is a false measure of employability to view it as merely the ability to secure an income; this does not take into account the appropriate utilization of knowledge; effective engagement with work; or growth and sustainability for the individual, the organization, society and the nation.

This study will tend to look at employability from the 'transitional stage' perspective. It will also bear in mind that even if the number of job openings in the labour market tends to exceed the number of graduates, as is the case in Qatar, and even if getting a job is not a major problem, the 'effective engagement' and 'appropriate utilization' of the graduates' 'human capital' can still remain a real issue and significant area of concern, particularly for policymakers and employers.

Hillage and Pollard (1998, cited in Pool and Sewell, 2007, p. 278) suggest that:

> 'In simple terms, employability is about being capable of getting and keeping fulfilling work. More comprehensively, employability is the capability to move self-sufficiently within the labour market to realise potential through sustainable employment.'

Hillage and Pollard (1998) suggest four main elements for employability:

a. The individual's 'Employability Assets', consisting of their knowledge, skills and attitudes;

b. 'Deployment', consisting of career management skills, including job search skills;

c. 'Presentation' concerned with 'job getting skills', such as CV writing, work experience and interview techniques;

d. The 'Ability' of a person to make the most of their 'Employability Assets',

which significantly depends on the individual's personal circumstances (internal and external).

Other researchers have established different models in their attempts to define and express employability. The 'Career EDGE' essential components of employability model of Pool and Sewell (2007, p. 280); and the 'USEM account of employability' model of Yorke and Knight (2006, p. 5), for example, pay great attention to the individual's own qualities and competencies: which tallies with the researcher's appreciation that graduates have a major responsibility towards their own employability and self-development, and that the greater the competition, the more responsibility is implied.

3.3.2 Understanding Graduates' Orientations

Understanding the different orientations of graduates towards the labour market and employability will help us achieve a better understanding of the 'subjective' factors associated with the transition process. Tomlinson (2007) explored graduate students' perceptions of the current graduate labour market and the way they understand their future career development and progression. An important factor that Tomlinson (2007) tried to emphasize was the subjective dimension of employability and how the particular characteristics of an individual do matter when talking about employability. He suggests that:

> 'The discourse into employability continually overlooks the subjective dimension of employability, in particular, how it relates to not only the way individuals come to perceive and understand the labour market they are entering, but also the types of dispositions, attitudes and identities they develop around their future work and employability' (Tomlinson, 2007, p. 286).

Other researchers (Yorke and Knight 2006; Pool and Sewell, 2007; Dafou, 2009) have also tried to suggest similar arguments by calling for a view of employability as something that not only has to do with the labour market itself, but a great deal to do with the graduate's own identity, biography, experience, propensity and disposition.

Tallying with the above suggestions was one main reason for this study not to adopt the ILO choice of plain 'satisfactory' or 'decent' employment as an end point of transition: as this tends to be quite subjective, and might not equate to similar satisfaction among other concerned parties.

Tomlinson's study suggests dividing graduates into four main groups:

   a. The careerists (who formed the majority)

   b. The ritualists

   c. The retreatists

   d. The rebels (theoretically suggested).

Although it can be argued that graduates' perceptions and attitudes might change over time, and may very well be influenced by surrounding labour market changes and circumstances, this classification by Tomlinson (2007) helps establish a reasonable understanding of how those students perceive the labour market and its needs.

However, Tomlinson's study could have established a more comprehensive understanding of how these 'orientations' would be translated into labour market 'realities'. As well as the sample of graduate students, perhaps it would have been more useful to take a sample of those who have already entered the

labour market on top of one of the other side of the equation, the employers: this could have helped explain the difference between theory and reality, 'orientation' and 'real practice'. As it is, we cannot tell whether the majority of 'careerists' who appeared in Tomlinson's study would continue to be 'careerists' in the real world of work; become a minority or even just turn into 'ritualists'.

This, perhaps, was the aim of Andrews and Higson (2008) when they sought to include employers' views of graduates' employability in addition to graduates' own views of the labour market, while focusing on one single discipline, business graduates, in four different European countries.

One common element among these studies was that they tended to pay more attention to factors to do with graduates, but place less emphasis on those associated with other key stakeholders: such as educational institutions and the employers. However, Dafou (2009) did try to study graduates' employability from the perspective of the other side of the equation - that of the employers', in an attempt to identify the potential links between educational credentials and the qualities sought by employers.

This research therefore intends to go beyond the framework of previous studies by including other key stakeholders: in particular, educational institutions. It will also include a wider spread of student coverage: high-school students, early-stage undergraduates, final-stage undergraduates, fresh graduates and transitioned graduates, in order to cover the different stages of transition (pre-STWT, STWT and post-STWT) from their different perspectives.

3.4 CAREER DEVELOPMENT

Harris-Bowlsbey (2012) notes that until the middle of the twentieth century, the way in which individuals selected their professions was not a particularly researched area. There was also no real thinking about the means by which individuals may improve their options for greater job satisfaction. However, amid continually changing economic conditions in many countries and increasing competition in labour markets on the one hand, and the desire to raise the level of effectiveness of individuals and their participation within their workplaces on the other, many researchers (Mackertich, 1974; Harris-Bowlsbey, 2012; Brown and Lent, 2013) have sought to achieve a clearer understanding of occupational behaviour and the relationship between the individual and their work.

Since they first appeared (Mackertich, 1974), the terminologies 'career planning', 'career guidance', 'career counselling' and 'career advisory' seem to have been used interchangeably and sometimes inaccurately. In fact, even the word 'career' seems problematic and is frequently used to refer to other terms such as work, occupation, vocation and job.

For this reason, prior to proceeding further with discussing the key concepts associated with career development, let us identify some key terms associated with this area of the literature, as these will be frequently referred to.

3.4.1 Defining Career and Career Development

Brown and Lent (2013, p. 8) suggest that 'work refers to the domain of life in which people provide services or create goods', whether on a paid basis (which is normally the case) or even on a voluntary one. They add that in most

societies, work is associated with the period of life after formal schooling. They recognize a 'job to be a specific work position held over a defined period of time'; and further argue that 'job and career are sometimes used synonymously in popular discourse, whereas vocational psychologists often use the term career to refer to a sequence or collection of jobs one has held over the course of one's work life', and that 'it is also common to use career in a more limited sense to refer to one's involvement in a particular job family (e.g., engineering)' (Brown and Lent, 2013, p. 8).

Limiting 'career' to refer to involvement in a particular job family seems to be the easier definition, although it might not be the more accurate one in reflecting the diversity of exposure someone may experience in their working life. Stretching the term to include the jobs someone has held over the course of their working life, regardless if these are related to each other or not, does not convey the essence of a career; it needs to reflect continuity. In other words, a collection of interrupted involvements within a working life might not really represent a career.

Others may define a career as, for example, 'a sequence of positions held by a person during the course of a lifetime, it comprises a series of work-related activities that provide continuity, order and meaning to a person's life' (Harris-Bowlsbey, 2012). Within the context of this research, the term 'career' shall be used to refer to 'a series of related jobs held over the course of one's work life': the continuity and relatedness among the jobs provides the boundary element to indicate a career path in someone's working life.

Other terms used interchangeably with 'career' by the public are 'vocation' and

'occupation'; for some, vocation and occupation are more related to jobs that do not require higher education (Brown and Lent, 2013), although this interpretation might not be truly accurate.

Other terms which will be frequently used within this study are 'career development', 'career planning', 'career management', 'career choice', 'career education' and 'career advisory or counselling'.

The term 'career development' is used in line with Brown and Lent (2013), and refers to a process that encompasses the working lifespan that begins at the end of childhood and culminates with retirement, including any formal or informal development of talents, interests, values and knowledge of the world of work.

Typically, 'career planning' is defined as 'the process of identifying one's values, skills, aptitudes, interests and inclinations and matching them with the most appropriate educational, training or work options', (Harris-Bowlsbey, 2012). Associated with career planning is 'career management', which connotes a situation in which the individual is actively engaged in directing the course of their career development (Brown and Lent, 2013), and implies the deployment of effective career planning tools.

Within the process of career development, someone might have one or multi career choice process(es), reflecting the selection or choice of a particular career path or field. Here, we are not referring to a selection within the world of work only, but to those made during educational life: as someone's working life is not isolated from their educational life; accordingly, the different stages of life would normally be part of career development.

Having begun to discuss the interaction between work and education, it is reasonable to introduce the term 'career education', which this study uses to refer to the practices and processes used at various educational stages as well as in the workplace in improving individuals' awareness, knowledge, skills and abilities to plan and manage their careers. It is not intended to imply here that such career education is being provided by specialized career advisors or counsellors, as this might represent a particular scope only of professional career education.

Brown and Lent (2013) recognize 'career counselling' as the services offered to ameliorate or prevent problems with work behaviour, regardless of the prestige or level of education associated with a given work option. Ultimately, the main task of career counselling is to help a client (who could be a student, graduate, worker or a parent) to make an appropriate decision at the appropriate time with regard to education or work. In popular discourse, the terms 'career advisory' and 'career guidance' are used synonymously with 'career counselling'.

3.4.2 The Need for Career Development

Though the need for career education initiatives has often been seen as important, perhaps it has never been so much as today: 'The focus on such initiatives is not diminishing as today's students face one of the most competitive employment environments in recent memory' (Anderson and Vandehey, 2006; U.S. Bureau of Labor and Statistics, 2010; cited in Anctil et al., 2012, p. 109).

The need for these services at schools is becoming more and more imperative, especially in guiding and advising high school students on study plans and the

available options (Pringle and Gold, 1989):

> 'Career planning, or as it used to be labeled, vocational counseling, flourished in the 1960s and focused on pencil and paper tests directed at school leavers who were in the process of deciding on a lifelong career. Such vocational counselling waned in the 1970s but has re-emerged in recent years as career planning and counseling' (Pringle and Gold, 1989, p.21).

It attracts the attention of parents, individuals, educators, employers and policymakers. For example, President Clinton's programme aimed to boost education and training by emphasizing that 'workers must get as much schooling as possible, demand broader duties on the job, and take on more responsibilities for the company's success' (*Business Week*, 1990, cited in Ashton and Green, 1996, p.12); and President Obama has emphasized career education by committing to 'foster a race in the nation's schools, by promoting world class academic standards and a curriculum that fosters critical thinking, problem solving, and the innovative use of knowledge to prepare students for college and career' (White House, 2010, para. 4; cited in Anctil et al., 2012, p. 109).

This focus is not solely related to high school students or new entrants to the labour market, but even to much earlier stages of education, particularly primary education (Nazli, 2007). It should continue throughout the individual's career life: including professional career development, managerial and executive levels (Pringle and Gold, 1989).

Many researchers and theorists (Ginzberg et. al, 1951; Super, 1957; Holland, 1966) have tried to set frameworks for understanding the factors influencing

career choice and development; and hence, for the individual (or the counsellor) to build on these to identify the potential appropriate options for study or career. In many cases, assessment tools or instruments have emerged out of these; these tools have been used to assist individuals in career planning, or counsellors in offering career advice to their clients.

3.5 EDUCATION-INDUSTRY PARTNERSHIP: FORMS AND APPROACHES

The focus of this thesis is on the education-industry partnership in general and is not limited to university-industry collaboration. However, it is reasonable to start addressing the matter from a university-industry aspect, as this is the most common aspect of the education-industry relationship.

The term university-industry 'partnership' has been used interchangeably with others such as 'collaboration', 'cooperation', 'alliance' and 'joint venture'. The literature on this has consistently been concerned with forms of collaboration, effectiveness and performance measurement, and is typically addressed to a knowledge-based economies context: where the university-industry partnership can be described as 'relatively mature', and where the role of the universities and other higher education institutions is not limited to 'teaching' only.

Admittedly, in most non-knowledge-based economies, the role of higher education institutions has tended to be limited to teaching, with some minimal exceptions; whereas in knowledge-based societies, universities have typically been looked at as a major source for knowledge transfer, through the supply of skilled graduates, and contributing to national innovation through their research. In the case of most US universities, a third mission is declared in addition to research and teaching: 'serving the community' (Decter, 2009, p. 625).

A comparative review of UK-US industry-university relationships (Decter, 2009) indicated that the industry-university relationships have roots going back to the nineteenth century. A key finding of Decter's study was that 'many UK and US universities were originally rooted in their communities with strong links to local industries. This culture has persisted and been strengthened through legislation in the US but changes in UK policy have resulted in reduced industry links' (2009, p. 624). This highlights the influence of government or state policy on university-industry links.

Twomey (1991) believed that most existing university-industry relationships were traditional and did not really lead to create problem-solving or opportunity-enhancing solutions, arguing that 'in large part, institutions of higher education have not established new ways of integrating the process of knowledge creation and distribution with non-academic institutions' (Twomey, 1991, p.5). He was not suggesting this was only a problem with higher education institutions; rather, that 'many individuals on both sides still stereotype the other in ways that make non-traditional linkages and activities nearly impossible' (Twomey, 1991, p.6).

However, there have been a number of successful models of the university-industry partnership, which will now be briefly outlined: with the aim of demonstrating how effective education-industry collaboration can result in benefits for the educational institutions, students and the business community.

3.5.1 Successful Models of Education-Industry Collaboration

The Center for IT Innovation (CITI)-CU-Denver and JD Edwards

Neumann and Banghart (2001) provided a practical model of a 'consulternship',

citing the case of the Center for IT Innovation (CITI), established by the College of Business at the University of Colorado in Denver (CU-Denver) with the goal of bridging the gap between the academic community, corporations and government agencies and developing mutually beneficial programmes and opportunities.

With a committee team from faculty and students and chaired by a senior executive from JD Edwards (an established firm in the IT industry), the CITI has been able to provide a practical example of how a 'consulternship' approach can be utilized in conducting a large project with the industry, through a combined faculty-student team:

> 'The establishment of this consulternship, and its successful outcomes, demonstrated that a university team could effectively act in a consulting role to solve business problems. Student feedback indicated significant learning outcomes and the faculty observed significant personal growth, especially in students' communication skills', (Neumann and Banghart, 2001, p. 7).

Although this initiative was implemented in a knowledge-based context and has demonstrated the ability of the consulternship in bridging the gap between the academic community and the IT industry, the argument here is that such an approach might still provide a good example of what economies which cannot yet be described as knowledge-based could adopt in order to establish a link between the academic community and industry, enhance students' skills, build up their employability and facilitate their entry into the labour market. We could also avoid graduates experiencing a useless internship, described by one graduate participant in the GulfTalent (2001) study:

'I did my internship with [Company x]. I didn't do anything there, I did absolutely nothing! I don't want to make the same mistake next time, so definitely will not join them after graduation', (cited in GulfTalent, 2011, p. 8).

This internship experience of a graduate in Saudi Arabia illustrates how the particular university-industry relationship tends to be ceremonial: the tie between the particular educational institution and the industry simply exists for its own sake, not to bring added value to stakeholders.

In contrast, the CITI type of education-industry cooperation can also be utilized to enhance lifelong learning of the enterprise's employees, not only for performing a time-framed project or consultancy (Otala, 1994); however, such university-industry cooperation requires the university, in particular, to be at a level to provide lifelong learning and add value to the industry through the consulternship, enabling a mutual interchange of benefit.

Halcrow-Cardiff University Strategic Collaboration

Halcrow-Cardiff University Strategic Collaboration (Martin et al., 2010), is another successful example of how such collaboration, if well managed, can result in tangible benefits to the industry, academic community and society. It shows how a higher education institution and an international civil and environmental engineering consultancy group managed to exchange benefits and add value to each other. Students from the School of Engineering at Cardiff University, involved in this collaboration process, have been especially able to acquire new practical/business skills and enhance their employability.

Schlumberger ME Learning Centre

Schlumberger (El Karkouri, 2011) is one of the world's leading oilfield services companies: supplying technology, information solutions and integrated project management that optimize reservoir performance for customers working in the oil and gas industry. Schlumberger was founded in 1926 and today employs more than 120,000 people of over 140 nationalities, working in approximately 80 countries.

As a result of its accumulated experiences and collaborative initiatives with many universities worldwide (including Emirates Foundation, UAE University), Schlumberger has established its Middle East Learning Center (MLC), where blended training is provided to engineering students as well as new engineers within a number of facilities that imitate real life ones, with the aim of simulating real field experience.

Karkouri (2011) found that the MLC has offered significant added value to the cohort in their career decisions, and to Schlumberger's business stability and prosperity.

3.5.2 Wider Aspects of Education-Industry Collaboration

We can see, then, that some elements might help in making the education-industry collaboration effective. Both education and business sectors aim to serve the community, while also trying to serve themselves and achieve benefits for their own sectors.

In this regard, Cummings and Jecks (2004) suggest that:

> 'In order for policies and strategies on skills and knowledge for

productivity and competitiveness to work today, they must be approached through a process of social dialogue. Social dialogue is one of the ILO's Strategic Objectives for addressing Decent Work and is widely perceived as being a major step to improving workplace conditions for productivity and international competitiveness', (Cummings and Jecks, 2004, p. 7).

They further illustrate that:

'Social dialogue is defined by the ILO as including all types of negotiation, consultation or exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy', (Cummings and Jecks, 2004, p. 7).

This study aims to extend the concept of Social Dialogue to include the educators in a form of national partnership.

At the same time, 'measurements of the long-term benefits of the collaboration require an appreciation of how one good idea leads to further ideas' (Martin et al., 2010, p. 58). In fact, the effective measurement of collaboration output plays a crucial role in sustaining it and enhancing effectiveness. Unfortunately, in many cases, the measurement of collaboration output is either overlooked or ineffectively performed (Martin et al., 2010).

As this study is in a Qatari context, its focus is not related to the role of university-industry collaboration in innovation, research or technology transfer, but that of education-industry collaboration in skill formation, career education and STWT facilitation: aiming to produce qualified, skilled graduates able to fulfil labour market requirements, engage effectively in their industries and serve their nation. This aspect forms a significant element of the originality of

this research, as it deals with the education-industry relationship within a non-knowledge-based economy and from a different perspective compared to most of the existing literature.

3.5.3 How Would it Work in the Case of Primary and Secondary Education Schools?

When we think of primary and secondary school students and staff from the point of view of such value-adding university-industry collaboration, it might be difficult to come up with immediate opportunities that would bring benefits to both parties, particularly to the industry; however, in terms of potential collaboration from the point of view of career education and serving the community, there are certainly many innovative initiatives that can bring benefit and value to each and every component of the society, including industry.

3.6 SUMMARY

The employability and work-readiness of graduates has become a central subject concerning educators, graduates, policymakers and employers: with the STWT stage attracting more and more attention from all stakeholders, including graduates themselves.

Recent research suggests that education-industry collaboration can play a crucial role in enhancing the success of academic communities, business communities and wider society. Moreover, it can have a great deal of impact on career education, skill formation, STWT facilitation and employability enhancement; however, the outcomes of such collaboration depend on its effectiveness, which makes measurement of the outcomes of no less importance than the collaboration itself.

The desired collaboration among different key stakeholders is not a time-framed project or initiative. Each stakeholder has a role to deliver and a responsibility to fulfil at the various stages of an individual's career life.

Having established this understanding of the key issues associated with school-to-work transition – namely, preparing students for the graduate labour market, employability, effective engagement and career development, and perhaps most importantly of all, collaboration between education and industry – which addresses 'what' needs to be achieved, we move now to address 'how' to achieve that: by examining the key theories associated with career choice and development, skill formation and motivation, and settling on the theoretical framework from which to base this research.

CHAPTER 4: THEORETICAL FRAMEWORK

4.0 INTRODUCTION

The last chapter examined key issues associated with STW – namely, preparing students for the graduate labour market, employability, effective engagement and career development, as well as some successful forms of collaboration between education and industry. This chapter builds on this by examining various theories around STWT: encompassing Career Development Theory, Career Choice Theory, Human Capital Theory as well as Expectancy Theory.

Following this and having reviewed the various theories noted above, the study selects its theoretical framework based on the key running themes.

The research sub-questions are then set out in order to focus and ground this research: which seeks to build an appropriate understanding of the situation in Qatar, identify common attributes of education-industry relationships and gaps among key stakeholders; before using the data and findings (set out in Chapters 6 and 7) to make various recommendations and suggest potential models which may help facilitate the transition of Qatari engineering graduates into the country's oil and gas industry and enhance their engagement with the world of work.

4.1 SELECTING THE THEORETICAL LENSES

The research moves now from discussing key concepts associated with STW towards selecting the theoretical lenses through which to look deeper into the interrelations of these concepts.

Although there is no real agreement about what theory is for, or in social science, at least, how far we can take it (Trowler, 2014, p. 10); 1), and although

there is an argument that the use of theory in empirical research is like mist on spectacles: it obscurers more than it illuminates (Shaw & Crompton, 2003, cited in Trowler, 2014, p.11), Trowler still suggests that it is better to deploy explicit, challengeable theory to edge out the sort of tacit theory that inevitably exists anyway and which is invisibly embodied and encoded in our understanding and use of data if not surfaced. Trowler further argues that empirical research is always underpinned by theory which conditions how we see and what we see.

Notwithstanding the different arguments, theories can still help explaining and understanding the relations between variables, guiding the research interventions, and indicating appropriate research designs to investigate them.

In this research, theories are utilized to understand the relation between career choice & development, skill formation and motivation at one side and the school-to-work transition and engagement with the world of work at the other.

Four theories are being examined here to understand what might be the role associated with the different stakeholders towards effective career education and skill formation that would facilitate the school-to-work transition and enhance engagement with the world of work.

These theories are further used to open up spaces for thinking of new forms and models towards achieving such facilitation of the transition process and enhancement of the engagement levels.

For performing the above deeper look, the following four theories are being examined to explain the relations between the key concepts associated with school-to-work transition:

1. Career Development Theory
2. Career Choice Theory
3. Human Capital Theory
4. Expectancy Theory

These four theories are believed to be more appropriate than others in helping the researcher to understand the Qatari context and address the research question.

4.2 CAREER CHOICE AND DEVELOPMENT

This section draws upon Super (1957) and Holland (1966) to illustrate the concept of career and how this relates to the transition of young people. There are other important theories of career development, choice and adjustment (such as the Minnesota Theory of Work Adjustment, or Gottfredson's Theory of Circumscription and Compromise in Career Guidance and Counseling) which this study chooses not to address: the goal was not to provide encyclopaedic coverage of all available theories, but rather to focus on those that appear more relevant to the research focus.

The intention here is not to give a detailed description of career planning and guidance theories, nor attempt to apply these theories to the Qatari case in any great detail. Rather, a more macro approach is considered in addressing the key issues associated with career development and guidance which, it is argued, would help achieve a better understanding of the engineering graduates' orientations and trajectories in a Qatari context, as well as understanding how graduates' employability could be developed through career planning and guidance.

4.2.1 An Overview of Career Development Theory

Developmental theories refer to the process of helping a person to develop and accept an integrated and adequate picture of themselves and their role in the world of work. A central concept is that people develop through stages over their lifetime", as illustrated by the National Guidance Research Forum (NGRF), 2014.

NGRF (2014) further illustrates that the general principles underlying developmental approaches to careers guidance are that:

- Individual development is a continuous process;

- The developmental process is irreversible;

- These processes can be differentiated into patterns called stages in the life span;

- The result of normal development is increasing maturity

The names most closely associated with this theory of vocational choice are Eli Ginzberg and Donald Super. Ginzberg et al. (1951) proposed three life stages which broadly corresponded with chronological age:

- The fantasy stage which lasted up until 11 years old

- The tentative stage, lasting from ages 11 to 17, with the three sub-stages of interest, capacity and value;

- The realistic stage, which lasted from age 17 onwards, with sub-stages of exploration, crystallisation and specification.

Super argued that Ginzberg's work failed to take into account the very

significant existing body of information about educational and vocational development (Osipow & Fitzgerald, 1996, p.111, cited in NGRF, 2014). Super (1957) and Super et al. (1961) extended Ginzberg's three life stages to five (with slightly different sub-stages): arguing that occupational preferences and competencies, individual life situations (and hence, their self-concepts) all change with time and experience. He also developed the concept of vocational maturity, which may or may not correspond to chronological age.

Harris-Bowlsbey (2012) notes that Super made tremendous contributions to this body of knowledge over a period of 40 years. Further, 'Super was perhaps the first vocational theorist to view career development in the context of other life domains or roles', (Brown and Lent, 2013, p. 6).

According to Harris-Bowlsbey (2012), Super's theory – known as Self-Concept Theory and summarised in Super's Archway of Career Determinants – suggests that someone's career is influenced and shaped by their self-concept, interests, values, abilities, and goals. These are key factors in career choice and development, without negating the influence of the surrounding environment.

Super sees career development as a lifelong process that can be viewed in five distinct life stages: growth, exploration, establishment, maintenance, and disengagement. The skill of making effective career choices depends upon the possession of some specific kinds of knowledge (about decision-making, self, the world of work, and specific occupations) and completing appropriate tasks, such as exploration and filtering of options at appropriate times. However, a particular weakness of Super's theory is its failure to integrate economic and

social factors that influence career decisions (Osipow and Fitzgerald, 1996, p.144; cited in NGRF, 2014).

What Harris-Bowlsbey (2012) emphasizes, as well as other career counsellors (El Rassi, 2011), is if this preliminary knowledge and these relevant skills have not been gained at appropriate age levels, there will be a later impact on career maturity: that is, the ability to cope well with career development tasks at a later life stage. This is supported by Nazli (2007), who tested Super's concepts for childhood years on Turkish primary schools.

Super's approach does not propose that it is the individual's sole responsibility to identify and develop such skills at different age levels; but rather, that these need to be built and developed, through integrated and combined efforts from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012).

Accordingly, someone's career planning and development should not start on leaving the school or on graduating from the college - but much earlier, when a student chooses from a variety of study plans at school; and should continue to evolve when choosing a major at college, deciding on the industry of preference or even the organization to be employed in (if the labour market situation allows for such flexibility). This is in line with the suggestion that 'career education programs in the Turkish education system should start' at Turkish primary schools (Nazli, 2007, p. 446), and confirms one key argument of this research: that the focus should not be limited to university-industry collaboration, but needs to extend it to include the other educational stages, if it is to have real added value.

4.2.2 An Overview of Career Choice Theory

Parsons (1908) is regarded as the founder of the vocational guidance movement. He developed the `talent matching' approach which subsequently became the trait and factor theory of occupational choice in the evolving discipline of differential psychology. Parsons' core concept was that of `matching'. He suggested that occupational choice occurs when people have achieved:

- An accurate understanding of their individual traits (e.g. personal abilities, aptitudes, interests, etc.);

- A knowledge of jobs and the labour market;

- Made a rational and objective judgement about the relationship between these two groups of facts.

Working within the same philosophical tradition, Holland (1966) developed an occupational classification system that categorises personalities and environments into six model types. His ideas still fall broadly within the matching tradition established by Parsons (1908).

Harris-Bowlsbey (2012) suggests that Super's theory is concerned with both the breadth and depth of career development and choice: addressing the choices made from childhood until death and across all roles in life.

On the other hand, Holland's Theory of Vocational Personalities in Work Environments focuses more narrowly on the process of each individual's career choice. Although his theory gives some attention to heredity and environment and their influence on career choices, Holland's emphasis is on the conditions

that influence choices at a given point of time.

Harris-Bowlsbey (2012) further illustrates Holland's suggestion that the personalities of individuals can be described as a combination of six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. In the same manner, environments (including occupations, specific jobs, programmes of study, and leisure activities) can be described as a combination of the same six types.

Mitchell and Krumboltz (1996) criticise its usefulness in current labour market conditions. Osipow and Fitzgerald (1996) also highlight its failure to address the issue of change in environments and individuals. They draw attention to problems inherent with the theory's associated measures for gender, but regard its most serious limitation as its failure to explain the process of personality development and its role in vocational selection (Osipow & Fitzgerald, 1996, p.104; cited in NGRF, 2014).

Holland's theory suggests that persons of a given type are attracted by environments of the same or a similar type: and that placing themselves in an environment of the same type, or one very similar to their own type, is very likely to bring satisfaction to the individual and benefits to an employer.

However, Holland's model might not be equally useful in guiding students towards their most appropriate career. For example, with different profiles in different circumstances, Feldman and Whitcomb (2005) suggest that 'students with a 'social' profile, as an example, have a much larger and more diffuse set of career options available to them than students with 'realistic' or 'investigative' profiles' (p. 7).

Different approaches by researchers and theorists have in one way or another built on the original one of Parsons (1908), 'trait and factor': which might be called the 'person-environment fit', where the ultimate goal is personal satisfaction and effective engagement with the environment: whether college, workplace, organization or the labour market.

In their correlational study, Rehfuss et al. (2012) examined the relationship between career satisfaction and person-organization, demands-abilities, and needs-supplies fit with counsellors, and concluded a significant positive correlation between the individual's satisfaction and the ability of an organization to match their values and needs. A similar argument can be made about the relationship between the individual's personal interests and skills and field of study, whether at high school or university; and the satisfaction and academic performance of the individual in their studies, which most likely would form the path towards the world of work.

Super's theory, then, is more concerned with career development over the individual's lifespan, while Holland's is more concerned with the point of career choice; however, both theories suggest that interests and values are key factors that influence career development and career choice, which Rehfuss et al. (2012) confirm.

4.2.3 The Role of Interests and Values in Career Planning

Harris-Bowlsbey (2012) illustrates that individuals persist in school courses, majors, occupations, and jobs at a higher rate if their measured interests guide their selection of these. The formation of interests begins in elementary and middle school and increasingly solidifies during secondary and post-secondary education. Once crystallized, career interests remain quite stable across the lifespan and continue to be important predictors of job satisfaction and stability.

Among the several self-characteristics relevant to career choice, interests are most important; however, Feldman and Whitcomb (2005) tell us something different: namely, that 'the prevalent practice of focusing students' attention on finding activities they like may be less successful in helping students identify appropriate careers than focusing students' attention on their skills and abilities'.

This is supported by the researcher and other practitioners in the field of career counselling. El Rassi (2011) suggests that career choice should be established based on three main aspects: interests, capability and feasibility, where capability refers to skills and abilities, and feasibility refers to labour market needs and circumstances. This understanding of the relationship between an individual's interests, capabilities and values on one side and the needs of the labour market on the other will be discussed further; however, it might be useful at this point to highlight Rehfuss et al. (2012) with regard to the person-environment fit.

Rehfuss et al. (2012) illustrate that the 'perceived person-environment (P-E) fit is not a single construct but rather consists of three domains: person-

organization fit, demands-abilities fit, and needs-supplies fit (Cable and DeRue, 2002; Resick et al., 2007; cited in Rehfuss et al., 2012, p.145). Further, 'the person-organization (P-O) is defined as the congruence between the employee's personal values and the organization's culture' (Cable and DeRue, 2002; Resick et al., 2007; cited in Rehfuss et al., 2012, p.145). It is a congruence that makes the individual connected to the mission of the organization.

The second domain of the person-environment fit is the demands-abilities (D-A) fit, sometimes called the person-job fit, which has to do with the match between the particular job requirements and the abilities and skills the individual possesses.

The third domain is the needs-supplies (N-S) fit, which refers to 'the extent to which employees' needs and tangible work rewards match, whether the rewards are in the form of pay, benefits, or training' (Cable and DeRue, 2002; cited in in Rehfuss et al., 2012, p.146).

Rehfuss et al. (2012) conclude that the N-S fit represents the most important aspect among the three P-E aspects, followed by the P-O fit; and hence, those who are seeking satisfaction need to get into organizations that allow for establishing such fits.

It seems that, regardless of the name or type of the 'matching aspect', the presence of a match between the individual and the environment (whether a school, a subject, a major, a workplace or an organization) would be more likely to result in the individual's satisfaction, which in turn can also be translated into a higher performance and more effective engagement with this environment.

Identifying the various factors/aspects that may influence such a match is significant, as it is the starting point for establishing the P-E match, if the environmental circumstances allow for that. It is not always possible, from an economic perspective or other environmental perspective(s), to establish the desired P-E match; but in such cases, it is good to maintain the mismatch at the lowest possible level. For instance, if the employment opportunities that the labour market is offering are much less than the number of graduates seeking a job, graduates have to show reasonable flexibility in dealing with the labour market if their values, interests and needs cannot be fully matched (Pitcher and Purcell, 1998). In fact, this flexibility from the graduates' side can also be understood as a 'tactic' towards achieving the N-S fit.

GulfTalent (2011) found that training and development represented the top factor influencing graduates' decisions while selecting an employer. Other top attractions were challenging and interesting work, a good public image and reputation of the organization, and attractive salary and benefits.

The above sequence of prioritization supports, to a significant extent, Rehfuss et al. (2012) as well as Tomlinson (2007): which indicated that the majority of graduates seemed to belong to the careerist category, which is willing to adapt to the labour market's requirements and appreciate the importance of being equipped with skills that form a key to their employability in the labour market. Meanwhile, GulfTalent (2011) find that graduates are also expecting employers to play a key role in giving them the chance to develop their skills and capacities and become effectively engaged within the labour market: suggesting that employers should not expect graduates with ready-made skills to emerge from educational institutions, but must play their part in the formation

and development of these skills.

4.3 SKILL FORMATION AND DEVELOPMENT

Thus far, we have established a reasonable appreciation of the significance of developing graduates' employability through career planning and development; it is evident that skills and competencies are essential elements in developing and strengthening someone's employability.

While it can be said that a skill is the ability to do something well, others define 'skill' as 'the ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carry out complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (interpersonal skills)' (businessdictionary.com, 2013).

The term 'competence' is interchangeably used with 'skill' in many cases, though competence is defined as 'a cluster of related abilities, commitments, knowledge, and skills that enable a person (or an organization) to act effectively in a job or situation' (businessdictionary.com, 2013).

Linking these definitions to the already discussed demands-abilities (D-A) fit of Rehfuss et al. (2012), it can be concluded that both skills and competences do refer to the 'ability to fulfil', leading us to ask how this can be formed and developed.

While the educational institutions have been seen as the main source of theoretical knowledge, the labour market is the most appropriate place to acquire practical and professional knowledge and skills. Education and training are the two main sources through which knowledge and skills can be gained

and improved, as argued by the Australian Minister for Employment, Education and Training: 'The world's most successful economies over the past two decades have given a high priority to education, skill and training as vital factors in their economic success' (cited in Ashton and Green, 1996, p.11).

In business organizations, training and development form an essential tool for the organization to help their employees acquire the necessary skills and competencies to deliver on job expectations. Training and development is also utilized as a vehicle, through which performance is enhanced and employees are transferred into higher levels of deliverables to tally with the organization's economic strategies. Moreover, it is used as a tool to improve the morale of employees, and hence, enhance job satisfaction and loyalty.

4.3.1 Skill Formation: Where Does It Start? Where Does It Stop?

Skill formation needs to be seen as a lifelong process that starts from early childhood educational stages and continues to build up the individual's skills day by day as they grow up. This incorporates actual schooling days and the educational curriculum as well as family life, and continues within the work environment.

Many studies emphasize that career education programmes should start at primary school, and promote the experiences of teachers and parents. However, it is more important to have skill formation begin at these early schooling stages, with systematic 'conscientious support' from parents to their children (Nazli, 2007, p. 446).

The different educational stages play a more systematic part in building and forming the individual's skills. As the individual grows up and progresses, the

more focused and the more labour market/business-oriented they should be.

Returning to graduates' employability discussed earlier in section 3.3, it can be seen that employability is about acquiring and utilizing skills. Tomlinson (2007), GulfTalent.com (2011) and many others confirm that the majority of graduates emerge from educational institutions full of hope of finding the work opportunity that will enable them to continue building and forming their skills and competencies: but this time, more focused on their careers and specific labour market trajectories.

In sum, it is necessary for graduates to have acquired the essential skills and competencies, for their entrance to the labour market – but these should never be assumed to be fixed or final, and instead keep evolving in relation to changes and developments within the labour market and the business community's needs. Accordingly, this requires educational institutions to maintain their curriculums as 'live' and keep up to date with changing labour market needs. It also requires individuals to maintain their skills and competencies at the level of labour market expectations: which can help graduates manage their career (Anakwe et al., 2000).

In this research, skills formation and development will be addressed in light of human capital theory, expectancy theory as well as the previously discussed career development theories. The following section draws upon the work of Becker (1964) to illustrate the concept of human capital approach in relation to skills formation and the transition of young people from school-to-work. This is more relevant to the research focus and the Qatari context when compared to other theoretical approaches such as the Liberal, Economic Governance,

Societal and State Development ones.

4.3.2 An Overview of Human Capital Theory

Section 4.1highlighted how Super's theory addresses the choices made from childhood until death and across all the roles that we play in life; whereas Holland's theory focuses on the process of how each individuals make their own career choice. In both theories, the development of skills at the different stages of an individual's life and the presence of the appropriate skills represent key elements in making appropriate choices and progressive steps in someone's career.

The question remains how skills are formed and developed. This section will address this query by discussing human capital theory: which can help in understanding how educational or training inputs are converted into knowledge and skills; and hence, an enhanced performance output, whether we mean the input made in the educational stages or at the workplace.

O'Donnell et al. (2001) suggest that 'vocational education and training (VET) systems can only be adequately understood with reference to the set of inter-relationships between the education system, industrial training system, the organizational structure of industry, the industrial relations system and the class and status relations of the wider society, as reflected in its political system.

Human capital theory comes from an economic framework, focusing on the role of (VET) in economic growth and productivity. The theory assumes that more and/or better investment in education and training leads to economic success and growth. It is further assumed that the principles of the theory can be applied to individuals, employers or the state: indeed, 'at its simplest, Human Capital

Theory amounts to the proposition that education or training can be regarded as investments with future material pay-offs, analogously to investment in physical capital' (Ashton and Green, 1996, p.14).

> *'The main motivation factor has probably been a realization that the growth of physical capital, at least at conventionally measured, explains a relatively small part of the growth of income in most countries',* (Becker, 1964, cited in Zamora, 2006).

From this perspective, 'education and schooling are seen as deliberate investments that prepare the labor force and increase productivity of individuals and organizations' (Nafukho et al., 2004, p. 546). 'The theory seeks to explain the gains of education and training as a form of investment in human resources, and the main proposition is that people are considered a form of capital for development' (Aliaga 2001; Becker, 1993; Benhabib and Spiegel, 1994; Engelbrecht, 2003; Hendricks, 2002, cited in Nafukho et al., 2004, p. 546).

The theory, however, oversimplifies the relationship between training and economic performance, by assuming a non-problematic straightforward relationship between training and education and the economic performance of individuals, organizations and states.

Ashton and Green suggest that 'it feeds us only a limited 'black box' of the effect of training on economic performance' (Ashton and Green, 1996, p.33): we might not be sure about the economic output of a certain education/training input. It is true that we may be able to predict that a certain amount or type of training/education could achieve improvement in performance; but normally, we are unable to predict the amount of performance improvement as a result of

such training/education.

The most significant weakness of this theory is that it deals with human capital as a resource to be acquired and utilized alongside other resource inputs, neglecting the social and economic context, in line with the suggestions of Maurice et al. (1986), they suggest that the theory is problematic because social and economic structures and actions forming and constraining quantity and quality of labour are neglected (Maurice et al., 1986, cited at Dobbins and others 2014, p. 518).

Human capital theory suggests that education or training raises the productivity of workers by imparting useful knowledge and skills; and hence, raises workers' future income by increasing their lifetime earnings (Becker, 1964; cited in Xiao 2001). The main assumption concerning the positive relationship between training investment and economic return remains valid according to various historical evidence and experience; however, this is not the case for the assumed linear graphical relationship, as it has much to do with other social and subjective factors as long as the human element is involved. In other words, 'it is incorrect to assume a linear and automatic connection between skill formation and economic performance' (Ashton and Green, p.3, 1996).

4.3.3 What Might be Missing in Human Capital Theory?

There appear to be two main elements which the theory does not provide clear answers for:

Measuring training output

Over the past thirty years or so, hundreds of studies have been conducted to estimate rates of return to education (RORE) (Xiao 2001, p.1). It is even more critical when we talk about training, as normally it is the employer who invests in

training the employees, and expects to have a clear return on investment (ROI).

Many researchers and practitioners have tried to develop tools and methods for measuring and evaluating the effectiveness of training. These are divided into two main schools: 'The narrow focused approach being attributed to Donald L Kirkpatrick and the somewhat broader model advocated by P. Warr et al' (Sentrico, 2013).

Kirkpatrick's model, known as the 'Four steps to measuring training effectiveness' model, looked at Reaction, Learning, Behaviour and Results; whereas Warr et al.'s, known as the CIRO model, looked at context evaluation, input evaluation, reaction evaluation and outcome evaluation.

These two models are merely cited as examples; there are many other different models for evaluating training effectiveness which vary in their approach and features, though they share the common aim of measuring the outcome of training input.

Explaining variance in training output

It can be understood, then, that educational or training input tends to result in different levels of output, which may vary significantly and subjectively, depending on different factors, such as:

    a. The way the recipient perceives the training input;

    b. The motives the recipient has;

    c. The circumstances that surround the education or the training process.

It is generally acceptable to argue that more training would result in higher skills; and hence, higher economic performance:

'But it is also clear that not all forms of training lead to higher wages or productivity, and that the links with profitability or with economic growth are still largely in the realm of theoretical belief or just plain hope' (Ashton and Green, 1996, p. 5).

Thus in light of career development theories, perhaps it is reasonable to suggest that guiding individuals towards educational or training inputs that match with their values and interests is more likely to achieve the P-E fit, and result in a higher output of education or training.

In pursuing this P-E fit within education and training, we need to:

- Do our utmost to identify the field/type of education or training that would most fit with the individual's values, interests and needs, and

- Enhance and foster the individual's motives. Most probably, this is the 'box' that can either be limited to a 'black box' (Ashton and Green, 1996, p.33), or turned into an 'amplifying box' that would turn standard, and perhaps simple, inputs into great outputs.

Brown and Lent (2013, p. 2) suggest that one way to view the question of why people work is through the lens of Abraham Maslow's (1943) famous hierarchy, where human needs range from those that focus on basic survival (the need for food) all the way to self-actualization (the need to realize our inner potential). This accords with Ashton and Green (1996, p.3): namely, that pursuing a high income or a good position might not necessarily be the only motive for seeking a competitive advantage, as there could be other motives (with higher values) for some people, such as self-fulfilment.

In line with that, Beidas (2009) suggests that:

> 'Culture, religion and economy are tied up in an inseparable matrix that has always been called upon whenever an answer to a problem is sought. The unique impact and influence that the belief of a Divine Omni-power exerts upon cultures and economies are unlike any other forces of change, leadership or otherwise', (Beidas, 2009, p. i).

To conclude, education and training are important inputs in the skill formation process. However, the motivation element of an individual during this process is no less important than their education or training, as the final output is well associated with the former (Ashton and Green, 1996; Beidas, 2009).

In Section 2.2.1 it was illustrated that QNV 2030 strives for 'motivated workforce'. Moreover, it was noted that in a Qatari context, as well as other neighbouring contexts, 'intrinsic values', such as the 'love of God, the country, the culture and traditions' or the 'feeling of belonging' might be something of significant value to think of while considering any form of skill formation or capacity building, as such values might be a form of creating motivation among people.

Thus, this study argues that any investment in human capital which aims to help form skills should focus on developing the "motivation from within" and "intrinsic values" in individuals. Ultimately, the concern should not be limited to the individual's interests: but needs to extend to other stakeholder interests, as well as the society and nation, in line with the adopted definitions for STWT: keeping in mind that monetary motives are likely to be less effective in case of prosperous economies.

For that reason, and in light of the suggested role for 'motives' in the outcome

of educational and training processes, the following section will shed the light on one of the motivation theories that may help achieving a better understanding of the role of 'motives' in such processes.

4.3.4 An Overview of Expectancy Theory

Motivation refers to reasons that underlie behavior (Guay et al., 2010, p. 712, cited at Lai, 2011) that is characterized by willingness and volition, or at its simplest definition the attribute that moves us to do or not to do something, (Gredler et al., 2004, p. 64, cited at Lai, 2011). Lai (2011) further illustrates that intrinsic motivation is animated by personal enjoyment, interest, or pleasure, whereas extrinsic motivation is governed by reinforcement contingencies. Motivation involves a constellation of closely related beliefs, perceptions, values, interests, and actions, and can be manipulated through certain instructional practices (Lai, 2011, P. 2).

The advent of the concept of motivation is not new in the industrial and vocational psychology field. Scholars used the motivation concept to analyse and explain behavior since the beginning of the 20th century, and that is what motivation theories is basically concerned with, the study of why people think and behave as they do. In this context, Victor Vroom (1964) introduced "expectancy theory" to organize and integrate existing knowledge in the field of vocational psychology and motivation (Lee, 2007, P. 788).

There are other important theories of motivation. Parijat and Bagga (2014) illustrates that these theories can be divided into two broad groups which are Content theories that focus on individual needs and Process theories that focus

on cognitive processes (that occur in the minds of employees) which motivate them. An example of content theories is Maslow's Hierarchy of Needs Theory whereas Cognitive Evaluation Theory is an example of the process theories, (Parijat and Bagga, 2014, P. 2), which this study chooses not to address: the goal was not to provide encyclopaedic coverage of the available motivation theories, but rather to focus on one that appear more relevant to the research focus and to help explaining the variance in educational and training processes outcomes as discussed earlier while addressing the human capital theory.

Lee (2007) suggests that Vroom's theory revealed implications for the explanation of the motivational factors of individuals to various situations or settings as well as for the explanation of the motivation factors of the worker to his work. Furthermore, Robbins (1983) suggests that, ''though expectancy theory has its critics, it has generally developed results that indicate it is currently the clearest and most accurate explanation of individual motivation'', (Robbins, 1983, P. 152, cited at Lee, 2007, P. 789), this is supported by Parijat and Bagga (2014) who suggest that the theory explains many of the phenomenon related to employee efforts, work performance, employee motivation etc. that are observed in organizations although it is a more complex theory of motivation, complicated and involves many variables. The theory says that the strength of a tendency to act in a certain way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual, making the theory seems to be intuitively appealing and is based on common sense (Parijat and Bagga, 2014, P. 4), and goes in line with the suggestions of Rehfuss et al. (2012) associated

with the (P-E) match, particularly the (N-S) match.

Parijat and Bagga (2014) add that one other important aspect of this theory is that it appreciates the subjective differences that cause differences in motivation of different individuals. The theory does not specify exactly which rewards will motivate particular groups of workers. In this sense, the theory allows for the fact that the rewards and their link with performance are likely to be seen as quite different in different cultures.

Vroom's expectancy theory premises the importance of motivation. He examines motivation from the perspective of why people choose a particular action or behavior. From this perspective, Vroom's expectancy theory offers critical value for this research. It provides answers in part to this research, in particular to the question "how to make it comes from within?" being one key theme of the theoretical framework of this research as will be further discussed in the following sections.

The Components of Expectancy Theory:

Expectancy (E): According to Lee (2007) expectancy is a person's estimation of the probability that effort will lead to successful performance. This estimation or belief is likewise based on the confidence a person has in his/her own capacities to bring skills to bear and influence outcomes (e.g. self-concept, self-efficacy, locus of control), (Lee, 2007, P. 789). Expectancy explains the subjective probability of the effort resulting in an outcome, and that represents the relation between efforts and performance as per Parijat and Bagga (2014).

Instrumentality (I): This is the person's perception of the probability that performance will lead to a specific outcome. It is related to the individual's beliefs or expectations that "if he or she behaves in a certain way, he or she will get certain things" (Nadler and Lawler, 1977, p. 218, cited at Lee, 2007, p. 789), and that represents the relation between performance and outcomes according to Parijat and Bagga (2014).

Valence (V): Vroom defined valence as "affective orientations toward particular outcomes", and according to Vroom (1964, cited at Lee, 2007, P. 789), "an outcome is positively valent when the person prefers attaining it to not attaining it" and "an outcome has a valence of zero when the person is indifferent to attaining or not attaining it, and it is negatively valent when he prefers not attaining it to attaining it". There can be a discrepancy between the anticipated satisfaction from an outcome (valence) and the actual satisfaction from an outcome (value). Valence represents the relation between outcome and personal goals according to Parijat and Bagga (2014).

Parijat and Bagga (2014) clarify that according to the Expectancy theory, there are four variables that matter for an individual's motivation, these 1) Individual effort, 2) Individual performance, 3) Outcomes/Rewards and 4) Personal goals. According to the expectancy theory, motivation is a function of expectancy, instrumentality and valence and can be estimated as following:

Motivation = E x I x V

Vroom's expectancy theory can be depicted as shown in figure 4. 1 below:

Figure: 4.1: Vroom's Expectancy Theory (Source: Lee, 2007, P. 789)
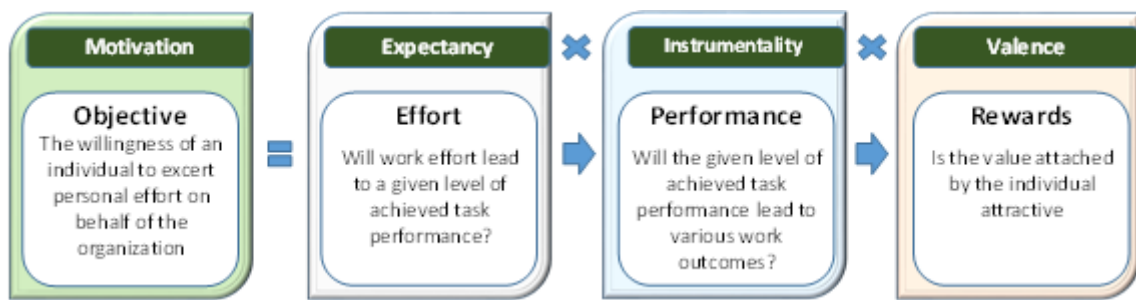
In light of the expectancy theory, it can be suggested that benefiting from education or training input is a function, in one way or another, of the individual's motives: that is to say, the way an individual perceives the education or training and the individual's objectives from education or training, which can vary quite significantly among individuals, may result in varying output.

4.4 VIEWING THE QATARI CONTEXT THROUGH THE SELECTED THEORETICAL LENSES

Many business communities do appreciate the importance of training and development and the value it may bring to their organizations. However, in many cases, there are still questions about its effectiveness: especially whether there is a demonstrable linear or automatic connection between skill formation and economic performance (Ashton and Green, 1996, p.3) as discussed under the human capital theory in section 4.3.2.

Moreover, employees' ability to utilize and benefit from training and development may vary and can depend on many subjective factors, which makes the evaluation process more complex as discussed under the expectancy theory in section 4.3.4. Nonetheless, although the economic

benefits are essential and form the main motivation for most individuals and organizations, we should not neglect the other, sometimes more important motivations (Ashton and Green, 1996, p.3):

> 'Perhaps the chief reason why education and training have penetrated the popular agenda in so many countries and to such an extent is the expected link between improving the education and training system and raising general living standards. This is not to deny that there are far wider, and to some people more profound, outcomes of a decent education, than merely an improved chance of finding employment and a larger wage packet. Education for citizenship, or for personal self-fulfillment in this life, has always been and should remain central to the objectives of any desirable skill formation system'.

Similarly, GulfTalent (2011) reported that 'good salary and benefits' is only one of the top factors for graduates when selecting an employer: placing fourth of 13 factors, behind 'Good training and development', 'Interesting and challenging work' and 'Good company image and reputation' as illustrated in (Figure 4.2):

Figure 4.2: Graduates' Expectations (Source: GulfTalent.com Survey, 2011, p.6)
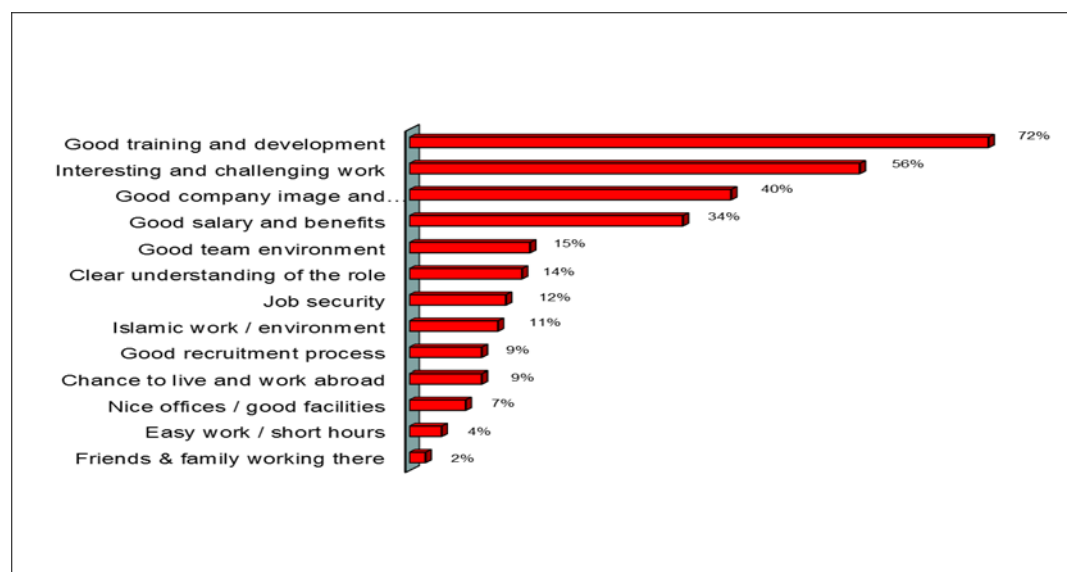
In other words, while monetary benefits are a priority for the majority of graduates, it is not the top priority. Most graduates appreciated the necessity to build up their own range of skills, develop their own capabilities and flourish by doing challenging work for a reputable employer.

Admittedly, many of these graduates perceive that such training and development will be translated later into better employment packages, which need not only consist of monetary components; however, this is certainly not to deny that they would also expect that monetary benefits must at least provide a decent standard of living, notwithstanding the subjective elements that might exist. This accord with Rehfuss et al. (2012) with regard to the N-S fit.

While it is apparent that skill formation is a lifelong process, it is also clear that individuals' orientations towards this may widely vary in terms of breadth and depth. By 'breadth', we mean the timespan allowed for skills formation, while 'depth' refers to the level of concentration and willingness required to benefit from the process. When we try to think of skill formation in light of Holland's Career Choice theory, it might be legitimate to anticipate that the presence of a match between the individual's interests and the skills under formation could result in better skills formation process output; and hence, better performance.

An Issue with Skill Formation, Career Education, Performance and Interacting Roles of Key Stakeholders:

A report prepared by the World Bank (WB, 2005) at the request of the Planning Council as part of the Labour Market Strategy for the State of Qatar made some critical findings with regard to career advisory provision and the interacting roles of the key stakeholders in the state. The report indicated that there is no

concerted school-based career education component in the curriculum and that the training initiatives are not aligned with the development strategy.

In addition to the reported gaps in career education, the reports talks about gaps in coordination among the key stakeholders in the state.

When we think of skill formation as a continuous process in light of Super's theory, it was noted that skills need to be built and developed through integrated and combined efforts from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012).

When we think of skill formation in light of the expectancy theory it might be legitimate to anticipate that the presence of 'motivating force' is the key towards an effective skill formation process and better performance, keeping in mind that the 'motivating force' remains something subjective and can vary significantly among different individuals.

Viewing the Qatari labour market, the 'black box' concept of Ashton and Green (1996) remains valid in a Qatari context when we try to establish or assess the factual relationship between the tremendous investment made in education and training and economic performance at the individual, organizational, social and ultimately state levels.

It might also be legitimate to link the varying orientations and attitudes of the graduates with Tomlinson (2007)'s arguments concerning the labour market. From the graduates' side, these varying attitudes would most probably result in varying performance levels in the work environment, despite the same

'educational or training dose'.

The statistical data examined in Table 2.8 indicated that in 2010, Qatar had 74,087 economically active (age 15+) Qataris, of whom 46,979 were male and 27,108 were female; but of this limited national human capital, only 1,877 females and 637 males, i.e. 3.4% of total economically active human capital, were looking for work or had never worked, making it quite legitimate to wonder about the effectiveness of career education. Amid such a prosperous labour market, especially featuring such scarcity in national human capital, it is difficult to question the availability of job offers and opportunities given this recurring question over career education effectiveness.

In his accession speech, Sheikh Tamim Bin Hamad Al-Thani (2013) emphasized:

> 'We will continue to invest in all sectors, but we will be more strict and transparent about the results and outputs. Why do I say this, dear audience? Because we cannot develop the human capital without the development of the health, education, culture and sports fields, nor can we develop them without investing effort and money, but if we employed major investments and we did not get the appropriate results, it shouldn't be accepted easily or unnoticed, because instead of getting any benefits we will get damage', Sheikh Tamim Bin Hamad Al-Thani – Emir of the State of Qatar (2013).

The issue is not only about having an educated population, but national human capacity able to effectively engage with the world of work, transfer the economy into a knowledge-based one and the nation into a developed one, without continuing to fully depend on the expatriate labour force, however, it is apparent from Sheikh Tamim's speech that the issue of outputs versus the inputs

remains a valid issue in a Qatari context.

4.5 THEORETICAL FRAMEWORK FOR THE RESEARCH

The main parties involved in the STWT process are the educators, employers, graduates and labour market policymakers.

As discussed in section 3.1, in most cases, and whenever the matter of STWT is raised, the 'university' is presented as the normal representative for educators – but a main argument of this study is that this frequently used representation is not accurate. We need to keep in mind that university graduates represent the final output of the educational system chain as a whole, not only an output of the university stage; without denying that universities and colleges represent a crucial link in the educational chain, but certainly not the entire one. In other words, it cannot be assumed that a university can perform its role in an isolated environment, separated from the high school and from the other educational stages. High schools, for instance, can be looked at, more or less, as an introductory stage for the university stage, directly affecting the overall performance/output of the latter.

This research looks at the educational process in relation to the STWT as a chain, consisting of many links developed over the different educational stages, not only the post-secondary (university or college) educational stage. It will, however, focus on the educational stages most relevant to the STWT:

a. Final years of high school

b. Early years of university/college education

c. Final years of university/college education.

The reason why more attention is being given to the final years of high school

and early years of university/college education is that these years form an advanced introduction to the selection of degree major or course and hence, the career life; whereas the final years of university/college form an early introduction to labour market entry, and hence, practical engagement with the working environment.

In light of the reviewed literature review and examined theories, it is found that the career choice and development theories do not provide adequate explanations about the roles of different parties associated with career development and skill formation, in addition to its short-falling in integrating the economic and social factors that influence career decisions (Osipow and Fitzgerald, 1996, p.144; cited in NGRF, 2014).

Furthermore, the human capital theory, as well as the state policies (for which the HC theory proved to be alluring), revolved around investing more in education and training (the supply part) and 'focused on supplying skilled and employable workers in isolation from other necessary ingredients in the policy recipe', (Dobbins et. al, 2014, p. 515) and without working on the 'motive' aspect of recipient, which can make significant variances in the process outcomes, and moreover, there seem to be much less emphasis on the 'market' side when it comes to skill formation and employability.

Accordingly, this study selects researching the relation between education-industry partnership at one side and skill formation, school-to-work transition and engagement with the world of work at the other side, through 1) investigating the different roles and level of contribution of the different stakeholders at the different stages of STWT and skill formation and; 2)

exploring the need for these stakeholders to work on the 'motives' aspect.

This theoretical framework for the research is anticipated to help enlightening some of the grey aspects within the examined theories and address the queries that are left unanswered, and ultimately, address the research main problem.

In light of the selected theoretical framework, the researcher now considers zooming in the picture by performing a deeper look into the Qatari context through the following two main themes, forming the theoretical framework from which to base this study:

1. Identifying the interacting roles of educators, employers, government and graduates towards facilitating the school-to-work transition.

2. The need for enhancing the "motives from within" towards enhancing the national capacity building and the engagement levels.

In line with the research objectives illustrated in section 1.3, the adopted theoretical framework will enable exploring the areas that require attention from the education-industry partnership in order to minimize the obstacles associated with the transition process, identifying the potential ways through which other stakeholders may help enhance the education-industry partnership and identifying potential models which both help explain and can aid in facilitating the school-to-work transition and enhancing the engagement levels with the labour market.

The adopted theoretical framework will further guide design the research methodology, illuminate the date, and ultimately help addressing the research question.

Figure 4.3 represents a theoretical scheme that outlines the above theoretical frameworks.

Figure 4.3: Theoretical Scheme for the Research (Source: The Author)
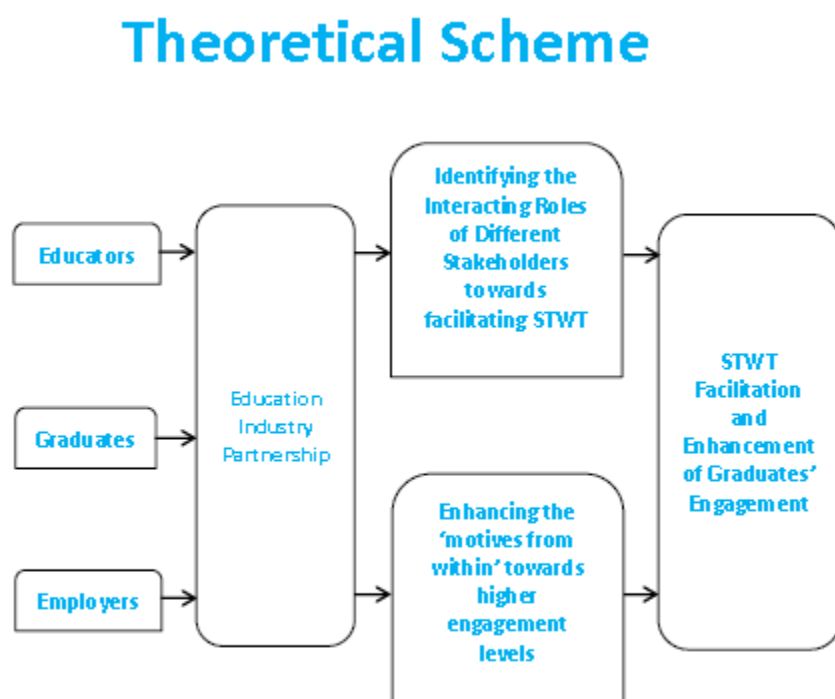
4.6 RESEARCH SUB-QUESTIONS

This section will set out the plan through which the developed theoretical framework will be deployed to address the research question. As the previous sections have explained, the theoretical framework is set within two main dimensions, focused on identifying the interacting roles of educators, employers, graduates and government towards facilitating the STWT; its link in building national human capacity; and the necessity for enhancing the "motives from within" towards enhancing the performance engagement levels at the world of work.

In the same way as the main research question evolved over the period of the research process, the research sub-questions evolved in parallel with the progress of the literature review and theoretical framework development. These sub-questions were subject to several revisions in order to address the main research question, the outcomes of the literature review and the main aspects of the theoretical framework.

With the final version of the research question set as **'How Can the Education-Industry Partnership within the Qatari Oil & Gas Industry Facilitate Engineering Graduates' Transition from School to Work and Enhance their Engagement with the Labour Market?',** the following four research sub-questions were derived, for the central research question to be appropriately addressed:

1. **How do high school students, engineering students and engineering graduates perceive the engineering field, particularly within the oil and gas industry? What do different parties and**

stakeholders expect from each other with respect to STWT?

Chapter 2 highlighted the significant scarcity of national human capital and a serious concern over the ability of the economy to utilize these scarce national resources effectively. This forms an additional challenge for the oil and gas industry. Accordingly, sub-question 1 seeks to understand the way that the engineering field, particularly within the oil and gas industry, is perceived by students at different stages, and how such perceptions may evolve/change over time. This sub-question is intended to give an overall picture of 'the transition scene' from the perspective of one key stakeholder of the transition process, the engineers, at their different stages: although this approach may only provide a snapshot of 'the transition scene', as will be further discussed in the next chapter. Sub-question 1 also aims to understand the expected input from the different stakeholders with respect to STWT from the perspective of other stakeholders.

2. **What forms of collaboration exist between the education sector and the oil and gas industry in a Qatari context? How might these be enhanced?**

Section 3.5 highlighted the importance of education-industry collaboration and the wider aspects of such collaboration. Accordingly, sub-question 2 aims to identify the nature of relationships/links between education sector and oil and gas employers in a Qatari context, the contribution of these towards skill formation and career development, and the way these could be strengthened and enhanced.

3. **What might other state and non-state stakeholders do to enhance**

national human capacity building efforts, particularly these associated with career education?

Sections 2.2 and 4.4 shed the light on Qatar's approach towards human capacity building. Accordingly, sub-question 3 aims to address the role of policymakers and decision makers with regard to setting necessary systems and policies that support the skill formation and performance enhancement, and more important, assess and monitor the effectiveness of such systems and policies. Sub-question 3 also aims to address the role of other non-state stakeholders towards enhancing the efforts associated with national human capacity building, in particular, these associated with career education.

4. **What might motivate Qatari students and graduates? And is it only about having policies, systems and procedures in place, or does something else need to be enhanced, to make the impetus come 'from within' the people?**

Section 4.4 highlighted that, in a Qatari context, there is an issue with skill formation and performance, despite the significant investments made by the state. Sub-question 4 seeks to address the key argument of enhancing performance and engagement through working on 'motives' and creating impetus 'from within' the people - not only relying on policies, systems or procedures, albeit important.

The answers to these four sub-questions will help address the main research question, the queries raised by the review of existing literature and the key aspects of the theoretical framework. They will help build an appropriate understanding of the current situation, current attributes of the education-

industry relationships, gaps among the key stakeholders and recommended steps which may help establish synergy among the various stakeholders and facilitate the process of the engineering graduates' transition into the oil and gas industry and enhance their engagement levels with the world of work. It is further assumed that addressing these sub-questions will help identify potential models which both help explain and can aid in facilitating the school-to-work transition and enhancing the engagement levels with the labour market. Addressing these sub-questions will also help identify key areas worthy of further investigation and research.

4.7 SUMMARY

This Chapter has developed the theoretical framework by explaining the relationship between the main terms and concepts associated with the research problem, in light of the selected theoretical lenses, namely; human capital theory, expectancy theory and career development theories. It moved on to illustrate the way in which this study intends to research the relationship between the key aspects associated with the research problem.

The research sub-questions, deemed necessary to address the key research question, the queries raised by the literature review and the key aspects of the theoretical framework, were then formulated.

The next Chapter will present the methodology, the tools utilized, efforts exerted and the limitations noted by the researcher while conducting this research.

PART 3: APPROACH AND METHODOLOGY

CHAPTER 5: RESEARCH METHODOLOGY

5.0 INTRODUCTION

The previous chapter denoted two main themes forming the theoretical framework for this study focused on identifying the interacting roles of the key stakeholders associated with the STWT process, and the need for enhancing the "motives from within" towards enhancing the engagement levels.

This chapter presents the methodology that will be applied to obtain and collect the required information, analyse the data and draw out the findings in order to address the key research question and sub-questions. The chapter justifies this methodology, as well as discussing the limitations and issues encountered during the execution of the research.

The study now proceeds by setting out the selection of the research design, methodology, methods and instruments for obtaining data necessary to address the research sub-questions and ultimately, the key research question itself. The research is based on individual interviews, focus group, self-completion questionnaire and the researcher's own observations to allow for covering the different stakeholders and addressing the research sub-questions.

This chapter provides a justification for the research design, methodology and methods chosen. A distinction is drawn between research design, methodology and method on the basis that research design refers to the overall strategy chosen by the researcher to integrate the different components of the study in a coherent and logical way, while methodology is defined as a way of thinking about social reality, and finally, method is defined as a set of procedures or techniques for gathering and analysing data (Strauss and Corbin, 1998, USC, 2014).

5.1 RESEARCH DESIGN

According to USC (2014) exploratory research design refers to the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring it will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. The research design directs the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal. It is a blueprint for conducting the study (Burns & Grove, 1998).

Davies P. (2006) suggests the research to be an exploration process and the researcher as explorer, where the exploration might be thought as a perspective or a special personal orientation (Stebbins, 2001, p. 30) toward approaching and carrying out social inquiry.

Consistent with the exploratory nature of the research objectives and theoretical framework, aiming to explore the areas that require attention from the education-industry partnership in order to minimize the obstacles associated with the transition process, identifying the potential ways through which other stakeholders may help enhance the education-industry partnership as well as identifying potential models which both help explain and can aid in facilitating the school-to-work transition and enhancing the engagement levels with the labour market, the researcher selected to adopt an exploratory design for the research, as it is found to be more appropriate to address the research problem, compared to other research designs such as descriptive design or experimental design…etc.

According to USC (2014) the function of a research design is to ensure that the evidence obtained enables a researcher effectively address the research problem logically and as unambiguously as possible. In social sciences research, obtaining information relevant to the research problem generally entails specifying the type of evidence needed to test a theory or to accurately describe and assess meaning related to an observable phenomenon.

Figure 5.1 below outlines the following general steps of the research design process:

Step 1: Identifying the research problem and justifying its selection, as discussed in Chapter 1.

Step 2: Review and synthesize previously published literature associated with the problem, and examining existing theories that can help understanding the problem within the studied context, as discussed in Chapter 2, 3 and 4.

Step 3: Specifying the theoretical framework and research questions central to the research problem through which the research problem to be addressed, as discussed in section 4.5

Step 4: Selecting an appropriate research methodology, methods and instruments that would allow for collecting the necessary data for addressing the research question effectively.

Step 5: Performing the data analysis in light of the research theoretical framework.

Step 6: Drawing on the data analysis to set the research findings, contributions and conclusions.

Figure 5.1: Steps of Research Design Process (Source: The Author)
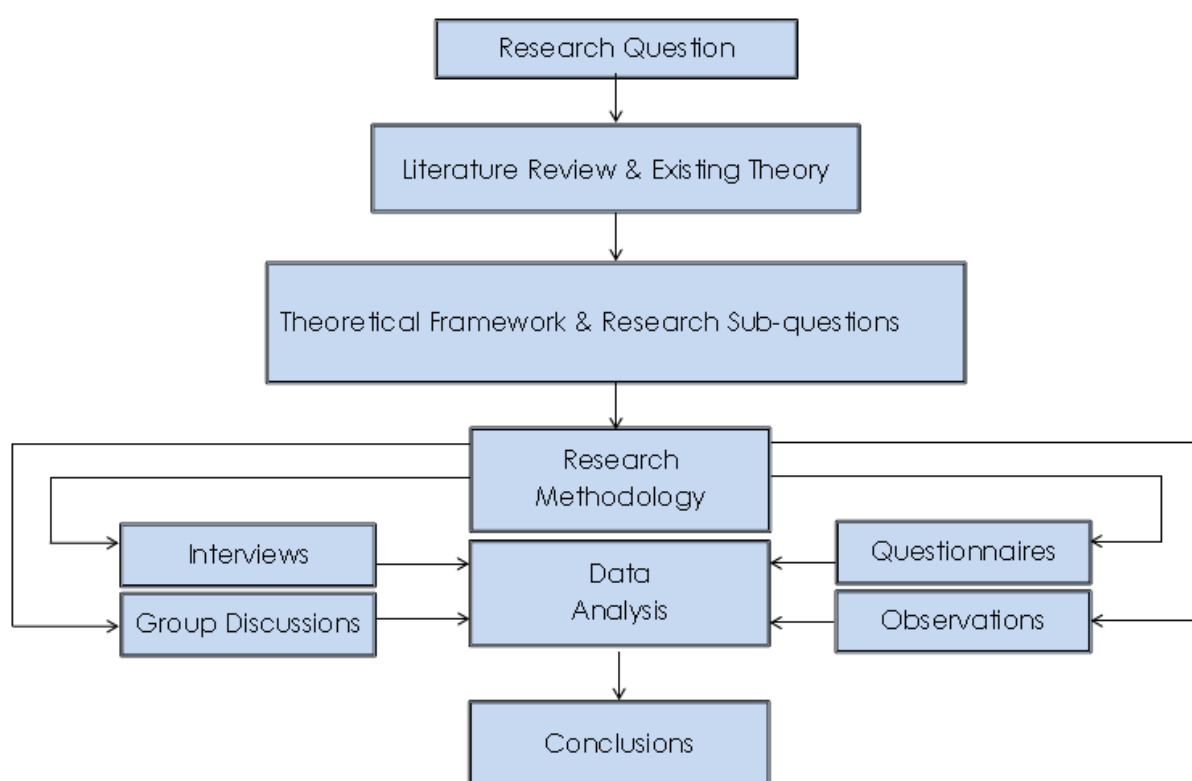
In deploying an exploratory research design, and in line with what USC (2014) tell us, it is anticipated that the study would allow for establishing better insights, generating new ideas, and providing an opportunity to define new terms and clarify existing concepts pertaining to the role of education-industry partnership in facilitating the transition process of graduates into the labour market and enhancing their performance levels, which goes in consistence with the objectives of the research as illustrated earlier in section 1.3.

5.2 RESEARCH METHODOLOGIES IN SOCIAL SCIENCES

This brief review of social science research methodologies is included to provide a framework for justifying the rationale for the methodology that was chosen. Social science research methodology (also referred as approach) is often classified as being either quantitative or qualitative and this distinction is useful as a means of highlighting the inherent value and weakness of either approach (Bryman, 2001, p. 20). The philosophical position that underpins each of these paradigms is worth recalling in order to relate the potential benefits or pitfalls of each as they may apply to this research problem. The quantitative approach, which is rooted in positivism, relies on a deductive or theory testing approach. It is used to quantify the problem by way of generating numerical data or data that can be transformed into useable statistics. Positivists argue that social science research should concern itself with facts rather than values. Facts are considered to be value free and are regarded as objective knowledge (CLMS, M1, U2, p.13). The theory testing aspect of quantitative research is intended to look at general propositions contained within theories and to apply them to specific cases. These theories may not be explicitly stated in which case the background literature related to a topic may be regarded as a proxy for theory (Bryman, 2001, p.7).

Qualitative research on the other hand relies on an inductive and exploratory approach trying to understand the social world. It is used to gain an understanding of underlying reasons, opinions, and motivations. This is based on an assessment of individual's interpretations of that world through the collection of qualitative data (Bryman, 2001). Qualitative approaches tend to ask questions such as how and why, whereas quantitative approaches tend to

focus more on numbers and would therefore ask questions such as, how many etc. (Bryman 2001, p. 20). Qualitative researchers insist on the need to view events and the social world through the eyes of the people they study. They regard context and environment as being important influences on social behaviour (Bryman 2001, p. 287).

Qualitative researchers also assert that human beings act consciously through their own individual agency. In doing so what we observe in terms of behaviour is really only an outward display of internal feelings and motivations (Miller et al, 2002, p. 8). Newman and Benz (1998) argue that the two paradigms should really be considered as being at opposite ends of an epistemological continuum rather than mutually exclusive.

Ultimately, both qualitative and quantitative researchers are concerned with addressing research questions, but using different means of doing so, as both 'think they know something about society worth telling to others, and they use a variety of forms, media and means to communicate their ideas and feelings', (Becker, 1986, p. 122; cited in Denzin and Lincoln, 2005, p. 11).

Denzin and Lincoln (2005) further suggest that qualitative researchers are more likely to pay more attention to social world details such as 'capturing the individual's point of view, examining the constraints of everyday life and securing rich descriptions' (Denzin and Lincoln, 2005, p. 12).

5.3 RATIONALE FOR SELECTING QUALITATIVE METHODOLOGY

With reference to the adopted theoretical framework and the research sub-questions developed accordingly, there are certain values and attitudes that

influence individuals' willingness to engage in skill formation and to perform while learning or working. These values must be captured as part of the research. There was a need to uncover views, feelings and attitudes by probing and trying to understand the motives underpinning such behaviour, and this can only be achieved through discussion. Likewise employers, policy-makers and other stakeholders, there is a need to understand their concerns and their views with regard to graduates' STWT, skill formation, engagement with world of work. This suggests that a qualitative approach to the research would also have utility for this research.

According to Silverman (2006) the core strength of qualitative research is its aptitude to study phenomena that are not available elsewhere (2006, p. 43), however, there lies a criticism of the qualitative research with respect to validity, which is often referred to as 'anecdotalism': This term relates to how reliable the explanations are following the researcher's account (2006, p. 47).

According to Boeije (2010), the qualitative research has an emerging character, and the data collection methods that are used allow 'an intimate' connection with the field of research (2010, p. 13). Furthermore, according to Cresswell (1994), a qualitative study is an investigation method of understanding a social problem based on structuring a multifaceted and holistic picture of the views of informants that is conducted in a natural setting and reported in writing. According to Silverman (2006) & Boeije (2010), one of the strong points of qualitative research approach is that it frequently permits larger flexibility, which is theoretically informed, than most quantitative research approach.

Based on the literature that was reviewed and the theories that were examined,

it can be seen that there is a considerable amount of theory that could be refined in a Qatari context. This assertion is based on the notion that these theories, albeit do help addressing the research question in a Qatari context, it still leave some queries unanswered. An inductive approach to refine certain aspects of these theories was therefore appropriate.

According to Boeije (2010), inductive thinking in qualitative research is vital, meaning that social phenomena is investigated in order to find pragmatic models that can be utilised as the foundation of a theory (Boeije, 2010, p. 5). In addition, Bernard and Ryan (2010) postulate that the study of a social phenomenon is constantly exploratory, and thus is best carried out inductively (Bernard and Ryan, 2010, p. 266).

Furthermore, Bryman (2008) suggest that different factors might influence a researcher in their selection of research methodology. Bryman (2008) highlights epistemological, ontological and theory considerations; however, two more factors of high significance may also affect the decision: (a) the values and (b) the practical considerations. The 'values' here refer to issues associated with the researcher themselves - their own values that might have an effect on the research process - whereas 'practical considerations' refer to issues associated with the environment within which the research is conducted.

Accordingly, the study will next illustrate how both values and practical considerations have had a part to play in the choice of a qualitative approach for this research.

Practical Considerations

As emphasized earlier, the nature of the research topic, information sought

(associated with views and opinions), as well as the background of the groups to be studied, made it more practical for the researcher to consider a qualitative approach for collecting and analysing the data, with very little utilization of quantification. Moreover, the scarcity in literature associated with the key research themes in a Qatari context, and the fact that the research is more concerned with understanding existing orientations and attributes, provided the rationale for a more exploratory stance. 'Qualitative research may serve the researcher's needs better, since it is typically associated with the generating rather than the testing of theory' (Bryman 2008, p. 26); and with examining and analysing processes and meanings, not causal relationships between variables (Denzin and Lincoln, 2005, p. 10).

Thus the qualitative approach was adopted, as this was found to be more appropriate for obtaining information, addressing the research questions, and achieving a better understanding of respondents' perceptions, realizations, opinions and even feelings concerning the various aspects of the STWT process, skill formation and engagement with the world of work.

The qualitative approach was also presumed to allow for establishing an interactive dialogue with the interviewees of the different stakeholders, and for constructive interaction with the participants while obtaining the data, in line with the suggestions of Denzin and Lincoln (2005) and Bryman (2008).

Values

While Denzin and Lincoln (2005) note that quantitative proponents 'claim that their work is done from within a value-free framework' (p. 10), it is appreciated in this case that maintaining the arguments, observations, suggestions, findings

and conclusions of the research in complete isolation from the researcher's own values is not practically possible. Thus a self-reflective, 'conscious partiality' had to be applied throughout this research (Bryman 2008, p. 25). May (2011) suggests that for:

> 'Those who adhere to the idea of 'value neutrality' throughout the research process, there are insurmountable problems in mounting a defence for this position. Most scientists would not, if asked, attempt to maintain this in the face of overwhelming arguments to the contrary. However, there are those who would adhere to the values of science and objectivity' (May, 2011, p. 56).

In simple terms, the researcher chooses to address the observations, suggestions, interpretations, findings and conclusions while remaining conscious of his own values and others' values and perspectives.

May (2011) further suggests that values may interact within the research process through the following stages:

1. Interests leading to research

2. Aims, objectives and design of research project

3. Data collection process

4. Interpretation of the data

5. The use made (or not) of the research findings.

Clearly, values may interact with the research process at every stage; however, this might still be acceptable as long as the researcher is able to reflect the truth in every aspect and adhere to the values of science and objectivity, rather than neutrality (May, 2011).

It is also difficult to assume that the researcher's own values do not form part of the opinions, suggestions and interactions of someone obtaining the views of

others. Moreover, the objectivity and values of science cannot be separated from the ethical considerations in conducting a social research study, as discussed later in this chapter.

Research approach can also be divided into fixed and flexible research approaches in terms the flexibility level extender in deploying data collection tools (Robson, 1993; cited in Prendergast, 2008).

Though it is understood the fixed approaches are not necessarily quantitative or the flexible approaches necessarily qualitative, 'fixed' and 'flexible' may refer to the 'freedom level' while collecting data on a certain variable or aspect. For a flexible approach, it can be useful when the variable(s) of interest are not quantitatively measurable, similar to those of the interest of this research.

Accordingly, the research employed a flexible approach in terms of the methods and tools used for data collection. For example, at the early stage, it was intended to approach the engineering students and graduate engineers by email to communicate the self-completion questionnaires; however, at a later stage, it was found that utilizing their respective educators and employers could be an option that would add value. One more example is the introduction of the focus group method at a later stage of the research process, although it was excluded at the early stage of the process. This alteration of method and/or tool is supported by Becker (1998) in regard to flexibility in deployed approaches for data gathering and collection, suggesting that:

> 'The qualitative researcher as *bricoleur*, or maker of quilts, uses aesthetic and material tools of his or her craft, deploying whatever strategies, methods, and empirical materials are at hand' (Becker, 1998, p. 2; cited in Denzin and Lincoln, 2005, p. 4).

5.4 RESEARCH METHODS AND INSTRUMENTS

A research method is a technique for collecting and analyzing data, which may include the deployment of a specific instrument for data gathering and analysis, such as survey, interview or observation. Kelly (2011) suggests that 'the research methods chosen by qualitative social researchers reflect five specific methodological commitments':

• Depicting the social world as seen through the eyes of subjects

• Description in context

• Emphasis on process

• Flexibility and limited structure

• Concepts and theory grounded in data.

In this research, a number of methods were used, consisting of semi-structured interviews, structured interviews and self-completion questionnaires, in addition to using the direct observation by the researcher. At a later stage of the research, the researcher was able to consider using a 'focus group discussion' method that was eliminated at the early stage of the study as would be further illustrated. These different methods were considered to make use of the advantages each of these methods has: in light of the perceived features and attributes of the targeted group of respondents as well as the sample size, access availability, logistics considerations and time implications.

In addition to utilizing the interviews and questionnaires, the researcher's own observations were combined with these two main methods. In other words, this flexible approach was selected to allow for dealing with the practical considerations of data collection, enriching the process and achieving a

comprehensive understanding of various aspects of the issues being addressed within the research: while maintaining the essence of the qualitative methodology as predominant, particularly given the study's emphasis on the generation of refines to existing theory rather than testing existing theory.

These qualitative interviews are a means of seeing the work environment through the eyes of the research subjects. There is a need to ask individuals about their own perceptions and interpretation of events through descriptive detail. The feeling was that the questionnaires alone would not allow the full range of human experience to emerge and that some important data would be omitted. While the questionnaire can provide information on how students and graduates feel about certain aspects associated with STWT, skill formation, career development as well as the engineering field and oil & gas industry, but it was anticipated by the researcher that the questionnaires remain limited in terms of explaining why they feel the way they do.

Therefore, a qualitative enquiry using face to face structured and semi-structured interviews with a number of individuals representing the different stakeholders associated with the research problem was considered an appropriate and practical way of addressing the research sub-questions mentioned in section 4. 5, in addition to utilizing self-completion questionnaires with students and fresh graduates as well as deploying the focus group interview with policy-makers and career guidance decision-makers at a later stage of the research.

The semi-structured interview was utilized with the senior officials and individuals; whereas the structured interview was used with transitioned

graduates; and the self-completion questionnaire was utilized with fresh graduates and final-stage engineering students. The self-completion questionnaires were also used with early-stage engineering students and final-stage high school students.

The latter sub-group was not intended to be included from the early stage of the research, only introduced at a later point and after performing the pilot survey: which revealed a need to understand the reasons underpinning the high school students' decisions pertaining to academic paths, and in particular, to joining the engineering disciplines. Addition of this category represents an advantage of the 'flexible approach'.

The following section details the methods adopted for gathering the data and the perceived advantages and disadvantages of each.

5.4.1 Semi-structured Interviews:

According to Boeije (2010) interviews offer a chance for researchers to learn about social life through the viewpoint, familiarity and words of the individuals that live it (2010, p. 62). The interaction going on behind the semi-structured interview technique is often referred to as 'the interview society' (Denzin & Lincoln, 2008, p. 119; Warren et al 2003, p. 108). The interviewer is dynamically involved and has to have good social skills, including listening and probing, to be able to pick upon issues related to the study (Mason, 2002, p. 74).

The semi-structured interview method is also useful when researchers are trying to obtain a true understanding of what is happening, since it entails methodical groundwork resulting in a list of themes and questions to be asked and discussed at some stage during the interview (Boeije, 2010, p. 62).

In fact, during the semi-structured interviews each interviewee was asked a set of similar questions based on the interview guide that consists of a list of questions and topics regarding skill formation, school-to-work transition and career development. Semi-structured interviews are flexible wherein the interviewer can alter the classification and particulars of how topics are examined, but also ensuring that the data could be investigated analytically for archetypes according to the type of the research question (Bernard and Ryan, 2010, p. 29). Moreover, during analysis, a semi-structured interview aids in the focusing on pieces of texts that contain the themes related to the research question (Bernard and Ryan, 2010, p. 97). This is because with this method, the researcher knows where to find the information in each text (Bernard and Ryan, 2010, p. 97).

While establishing a link between the selected research methods and targeted groups of participants, the researcher chose to conduct semi-structured interviews with nineteen (19) people: representing a group of senior officials, academics and executives from governmental authorities, key employers and educators. The researcher perceived that the views of these senior officials, academics and executives could not simply be obtained through a self-completion questionnaire or even strictly structured interviews: as according to the researcher's own experience, most senior people prefer not to be asked for

information as if they are being questioned. This perception is based on more than 15 years of interaction with many senior officials and executives in different sectors and industries within Qatar.

Moreover, the one-to-one interviews were perceived as involving a higher level of dialogue, which was certainly required to stimulate the positive participation of this group in the research process. Although the researcher maintained the majority of questions within a collection of questions to be asked in each category, the semi-structured approach allowed for additional space and flexibility to add, edit or address additional points as deemed appropriate according to the flow of the interview.

Meanwhile, the researcher tried to maintain 'the standardization of both the asking of questions and the recording of answers', to reduce error due to the interviewer's own variability (Bryman, 2008, p. 194); without negating the importance of non-verbal communications during the interview, such as facial expressions and hand gestures: as 'non-verbal communication can be viewed as an additional method for obtaining information, helping to increase communication' (Bull, 2001; cited in Onwuegbuzie et al. 2010, p. 699).

Appendices 8, 9 and 10 provide samples of the questions asked during these semi-structured interviews with educators, employers, government authorities and other parties.

5.4.2 Structured Interviews:

The main benefit of a structured interview is that all of the respondents are asked precisely the same questions and this is considered important in comparing the responses of the respondents (Bryman, 2004, p. 110), however, there is the drawback that questions may need to be asked in a specific order, which can weaken the ability of the respondent to remember and communicate their experiences as a recalled memory elicits other thoughts on topics, perhaps occurring later on the researcher's list of questions (Bryman, 2004, p. 126).

The method offers a large coverage and discloses insights on the study to the researcher, due to its qualitative nature (Denzin & Lincoln, 2008, p. 129).

This approach was utilized in order to interview eighteen (18) transitioned engineers within the oil and gas industry. Although this group was perceived to express higher levels of flexibility, which was indeed the case, the researcher appreciated the need to deeply understand the perceptions, views and concerns of this group. Flexibility in this case allowed for standardized questions to be included and covered during the interviews.

Moreover, unlike the case of the senior officials, executives and academics, the interview with this group was perceived to require a standardized method which would allow for a minimizing of the differences between the interviews in the whole research project, taking into account that these interviews were representing one particular group of participants - transitioned engineers within the oil and gas industry - and hence, a more standardized approach was perceived as more reasonable in terms of collecting the sought information.

Appendix 11 provides a sample of the questions asked during these structured interviews.

A similar approach was utilized to perform three (3) additional structured interviews with academic advisors at three high schools at a later stage of the research project. Appendix 12 provides a sample of the questions addressed during these structured interviews.

At the same time, using the interviews as a single option with all the participants was not possible, due to the fact that the number of participants was planned to be approximately 20 senior people, 20 fresh graduates and 100 students at different stages, which made it quite difficult from a practical perspective to perform a one-to-one interview with each of these.

Furthermore, one ethical concern was not to intrude on the participants through one-to-one contact: particularly females, as this could affect the participation rate, bearing in mind that female students are perceived by the researcher to have less interaction with males within the Qatari education system (including high schools and university students) when compared to the labour market environment. Hence, the researcher tried to keep the one-to-one interviews limited to senior participants and after obtaining their permission to conduct the interview.

5.4.3 Focus Group Discussion:

Individual interviews and focus group are commonly used methods for collecting data in qualitative research. Individual interviews are mostly in-depth ones undertaken with individual respondents whilst the method of focus group,

also known as group discussion, normally is undertaken for collecting data from a group of individuals. Even though both methods adopt different approaches, the purpose of each is to obtain a deep understanding of the cases being studied, mainly how individuals act and think (Goodwin and Horowitz, 2002, p. 35 and Lee, 1993, p. 120). Hence, the usefulness of individual interviews and focus group aids researchers involved in qualitative studies to stay as near as possible to the phenomena they study, in order to gain a comprehensive understanding of individuals (Goodwin and Horowitz, 2002, p. 36).

Some authors tend to draw distinction between focus group and group interview (Bryman, 2008, p. 473), and regardless of the reasoning underpinning such distinction, Bryman (2008) suggests that most focus groups are undertaken within qualitative researches as the researchers are 'explicitly concerned to reveal how the group participants view the issues with which they are confronted' (2008, p. 473), and that in using the focus group method, the researcher may stand a chance of ending up with more realistic accounts of what people think because of the challenging process normally associated with group discussions.

A focus group interview or discussion is normally run by a person called moderator or facilitator, and he or she will be expected to guide the discussion without being too intrusive (Bryman, 2008).

At a later stage of this research, there was a need to learn more about the policy-makers and career guidance decision-makers views on how to enhance 'motives from within' among students and graduates.

The need to glean this type of information, coupled with an opportunity provided to the researcher by QCF through the 1st Qatar Career Forum, consideration was given to setting up focus group discussion at the level of policy-makers and career guidance decision-makers in Qatar. This method has some advantages over one to one interview. It would allow participants to respond to comments made by other individuals in the group and therefore allow the researcher to observe the dynamics of the group. It also facilitates the discussion on a range of topics in one single session. In spite of these advantages there are certain limitations associated with the focus group method, as clarified by (Bryman, 2008, p. 488). Firstly, the responses are not independent of each other because a few dominant members in the group can influence the responses given by others. Secondly the data may be more difficult to record accurately and therefore to interpret than individual interviews; however, since the event was organized by QCF, it was possible to handle this limitation through using a secretary to make the recordings for the entire session. Bryman (2008, p. 489) further illustrates that in a focus group context, participants may have more tendency to expressing culturally expected views than in individual interviews.

Furthermore, the ethical issue of sensitive or confidential information is also more difficult to deal with.

At the early stage of the research, the researcher opted not to choose focus group interviews, as this method would have required different logistical arrangements and different protocols to obtain access and consents. In fact, the researcher tried to consider this option through the Qatari Society of Engineers (QSE), a civil community organization concerned with enhancing the engineering profession and those working within it; but unfortunately, after

considerable communication with the QSE, this option was found not possible.

After initial assessment and approach to universities and labour market organizations, the option of using these entities was also ruled out.

Nonetheless, the researcher was able at a later stage to deploy this method for gathering necessary data pertaining policy-makers and career guidance decision-makers views on how to enhance 'motives from within' among students and graduates.

Appendix 13 provides an outline of the questions, themes and discussion points addressed during the focus group discussion.

5.4.4 Self-completion Questionnaires:

The self-completion questionnaire was chosen by the researcher as it allowed for covering a large number of participants, particularly engineering students at their different stages, with minimal cost, reasonable time and physical resources. It also seemed much less intrusive and minimized the concern associated with the potential intrusion of one-to-one contact with female participants.

Furthermore, these questionnaires allowed for a standardized set of questions and form of communication, in addition to an easier access to potential participants, with the maintenance of anonymity for these participants.

At the same time, the researcher understood that the questionnaire had some limitations, as it could not allow for any form of interaction with the participant: hence, more care and attention would be required when deciding on the right set of questions.

These questionnaires were used with a relatively large number of targeted

groups of participants, including high school students, engineering college students and new engineers in the oil and gas industry. From the start, the researcher appreciated that interviewing such a large group was not an option: due to the time, effort, logistics and cost implications involved, so it was decided to consider a self-completion (self-administered) questionnaire (Keller and Warrack, 2003, p. 141).

The above process resulted in the following participants: fifty-one (51) final-stage high school students, thirty-six (36) early-stage engineering students, twenty-seven (27) final-stage engineering students, and twenty-two (22) new engineers in the oil and gas industry: a total of one hundred and thirty-six (136) participants.

Though this might seem a large number of participants, and the questionnaires have enabled valuable data to be obtained about these students' and new engineers' perceptions, views and orientations towards the engineering disciplines, it is still appreciated that had it been possible for the researcher to interview all of these students and fresh engineers, it could have added much more value. However, as mentioned earlier, due to practical and ethical considerations, that was not possible.

Appendices 1, 2, 3, 4, 5, 6 and 7 present the questionnaires distributed to the potential participants.

5.4.5 Direct Observation:

Observing people's behaviour directly to elicit information about a particular phenomenon can be a useful approach (Bryman, 2008). In this study, the researcher was not in a position to directly participate in the phenomenon being

studied, the processes being observed or the research context, keeping into consideration that the research is not associated with a particular group of people located at a particular organization or location. However, the researcher was in a position to closely observe the behaviour, attitudes, developments and debates within the research context, and to record in much detail observations that are relevant to the key aspects of the research problem with the aim of developing a narrative account of the research scene.

This direct observation by the researcher was done through being involved in soft business skills training projects in the oil and gas industry and a Career Advisory Project initiative that aims to raise career awareness levels among young people. Accordingly, direct observation was found to be a realistic and beneficial approach.

One of the privileges that the researcher has is that of enjoying pre-established connections within the oil and gas industry: due to the nature of his field of business, which has involved interacting with the oil and gas industry over the last 18 years. This has enabled a reasonable level of familiarity with the industry, and an insight (to a certain extent) of the attitudes, attributes and orientations of the engineers within it.

Those 18 years of business experience in this industry have also enriched the researcher's network, which served significantly in scheduling and performing the interviews with many senior officials, executives and fresh engineers functioning within it.

One more supportive element for the researcher was that of the MBA programme experience at Qatar University during 2003-2005, where interaction and professional relationships were established with other programme participants, the majority of whom were executives or senior engineers working within the oil and gas industry.

In conducting the research process, the researcher was able to benefit of his daily interaction and involvement in soft business skills training in the oil and gas industry; as well as involvement in a national career advisory initiative project, in addition to frequent participation in conferences and forums discussing key themes and issues related to the research: such as the Annual HR Strategies in Oil, Gas and Petrochemicals Forum, the Annual Managing Local Talents Conference, the Annual Best HR Practices in Oil, Gas and Petrochemicals Conference, and the Annual Qatar Career Fair.

These activities allowed the researcher to continually interact with people representing key stakeholders within the STWT, skill formation and career advisory processes: including decision makers within the educational and industrial sectors, policymakers from governmental authorities, experienced engineers and fresh graduates.

5.4.6 Research Instruments:

In designing the research instruments, a number of questions have been brought up in order to address the main research question. The development of the research sub-questions listed in section 4.5 which were informed by the debates that were reported on in the literature reviews, the various reports and

statistics that were referred to in Chapters 2 and 3 and the theoretical framework, acted as the basis to design the guides for the interviews, the focus group and the self-completion questionnaires.

Meanwhile, the stages of STWT as recognized in section 3.1 have informed the categorization of the different stakeholders associated with the key aspects of the research. Therefore, the data necessary for addressing the research sub-questions were sought from following categories:

- Senior Officials within state, educational and industrial organizations

- Engineering graduates

- Engineering students

- High school students

- Career advisors within educational and industrial institutions

In combining interviews, questionnaires and direct observations, the researcher did his best to get the most out of these methods together to address the research problem.

Appendices 1-18 present sample questions, questionnaires and communications utilized by the researcher while deploying the research methods as illustrated earlier to gather data from concerned participants.

5.5 SAMPLING

Deciding on the sample for a survey is a crucial element of the research process and central to the research design, as generalization of the outcomes

of a survey to a population depends significantly on being able to select a representative sample. As Fink (1995) tells us, a 'good sample is a miniature version of the population – just like it, only smaller (p.1; cited in May, 2011, p. 98).

One main concern for the researcher here was to be able to decide on samples that would be representative of their respective populations and fit the purpose of the research. Practical considerations such as accessibility and time were key issues when deciding on the sample type and size.

The researcher established an initial list of fifteen (15) potential semi-structured interviews to cover the key players among the regulators, educators and employers. At that stage, the list did include some names that seemed to be target interviews; however, it also included potential titles with potential organizations that could only be determined while the fieldwork was progressing, which resulted in increasing the final list of interviewees to nineteen (19).

Whereas the fresh engineers within the oil and gas industry were approached through their respective employers or universities, transitioned engineers were approached directly through the researcher's connections; on several occasions, one transitioned engineer referred the researcher to another. This was not the original plan for this particular sub-group, as it was intended to approach and cover it in a random manner through the Qatari Society of Engineers (QSE); however, it was found that this was not possible during the execution stage.

The research sample was chosen from a range of categories based on the classified stages of STWT process and the identified stakeholders associated with the transition, skill formation and career education processes as described in Chapter 3. Accordingly, the following distinct groups of participants were approached:

1. Planning and Regulating Authorities

Here, senior officials and members among the education regulating authorities, such as the Supreme Council of Education; as well as the labour regulating authorities, such as the Ministry of Labour, were approached.

2. Higher Educational Institutions

Here, senior officials, academics and academic advisors at the main engineering education providers in the country - namely, Qatar University, A & M Texas University, and North Atlantic College – were approached.

3. Key Employers within the oil and gas industry

Here, senior officials and executives, HR and Personnel Managers, Learning and Development Managers as well as Career Advisors at some of the key employers within the oil and gas industry were approached; however, the names of these organizations will remain confidential, at the request of the interviewees.

4. Engineering Students and Graduates

    Here, five distinct sub-groups were approached:

    o Final-stage High School students (levels 11 and 12)

    o Early-stage engineering students

    o Final-stage engineering students (about to graduate);

- o Fresh engineers (1-2 years within the labour market);

- o Transitioned engineers (3-5 years within the labour market).

The last three sub-groups represent the three stages of transition defined earlier (pre-STWT, STWT and post-STWT); however, the first two sub-groups were introduced to establish a better understanding of the reasons underpinning the high school students' decisions in joining engineering colleges, and to further understand career education at different stages.

5.5.1 Probability Samples

Probability samples are also known as random samples, in which each person in the population of interest has an equal chance of being part of the sample (May, 2011). This was the case for the engineering students' group at their early and final stages as well as the fresh engineers: as more of a random sampling approach was applied within the identified sampling frame. All three existing engineering colleges were approached, and each Qatari engineering student could have participated in the survey through the self-completion questionnaire, making the samples pertaining to the engineering students, at their different stages, random and representative.

The researcher has allowed for two versions of each questionnaire to be distributed to each sub-group, except for that related to the high school students. The reason for this is that the sub-groups of engineering students and fresh engineers were approached either through the educators or employers (including engineering students). As all the oil and gas companies are sponsoring engineering students, the researcher found it an appropriate

opportunity to approach students through their sponsors, keeping in mind that the responses to these questionnaires were anonymous and neither educators nor employers had access to these.

Appendices 16 and 17 illustrate sample e-mail communications with educators and employers, asking them to distribute the self-completion questionnaire to potential participants.

In order to avoid duplicating responses should a potential participant receive the questionnaires through both the educator and employer, on the first introductory page, participants were asked to ignore the questionnaire if they had previously completed a similar survey for the same researcher.

One drawback in asking the educators and employers to communicate the questionnaires to the engineering students and fresh engineers was that the researcher could not know the exact number of the questionnaires distributed to each group. It was confirmed by the educators and employers that the self-completion questionnaires had been cumulatively communicated to 67 high school engineering stream students, 48 early stage engineering students, 38 final stage engineering students and 30 fresh engineers. Of this, the following response rates were achieved:

- 51 final-stage high school students of 67 (participation rate, 76%)

- 36 early-stage engineering students of 48 (participation rate, 75%)

- 27 final-stage engineering students of 38 (participation rate, 71%)

- 22 fresh engineers in the oil and gas industry of 30 (participation rate, 73%).

In any case, there were two main advantages to utilizing the educators and

employers in communicating the questionnaires. First: it made for a more formal approach (which may have even encouraged some towards responding and completing the questionnaire), and avoided the researcher encountering the complexity of obtaining separate consent to:

a) Obtain the contact details of these potential participants

b) Contact them directly, which would have entailed additional legal and ethical considerations for the survey process and extra time and effort.

Second: it made it easier to maintain focus on the targeted respondents by including only Qatari students and graduates within the survey.

5.5.2 Non-probability Samples

Although the researcher would have preferred random sampling to have been possible with all targeted groups, for practical considerations such as the availability of accurate information related to the sampling frames, accessibility, time and resource requirements, it was recognized at an early stage that it would not always be practically possible.

Convenience Sample:

A random sample was not identified as an option for the sample pertaining of high school students: something of a 'convenience sample' (Bryan, 2008), as accessibility to these students came as a result of interviewing Academic Advisors at their respective schools; while it was clear that the actual population of this sub-group is much larger than that included in the sample.

This sub-group could have been sampled randomly should the questionnaire have been distributed to the potential participants through one of the concerned education authorities, such as the Supreme Education Council. But this was

neither intended nor planned by the researcher: it could have resulted in a massive amount of data for this sub-group, which was not the focus of this research, and hence, was not presumed to represent a significant limitation to the generalizing of the findings. The main intention of including this sub-category was to have a clearer idea about the nature of relations between high schools and engineering institutions on the one side as well as the oil and gas industry on the other, in addition to understanding more about the career education process in high schools.

A similar 'convenience sample' approach was used for the transitioned engineers group in the oil and gas industry, as these were only approached and access made possible by their respective employers. The research has certainly not covered every employer in the oil and gas industry.

Purposive Sample:

Another type of non-probability sampling used was associated in selecting the survey participants from the education institutions, employers and other concerned parties, which represents a form of 'purposive sampling'. The aim here was participants relevant to the research and able to address the research questions; thus the researcher sought to make use of his connections with some senior people within the oil and gas industry, and had a tendency to start the semi-structured interview group with some of his MBA classmates. However, the researcher fully appreciated the need to maintain a professional and objective approach in handling and performing such interviews, and tried his utmost to utilize the openness of such interviews to enrich the research outcomes. Many of these interviews led to identifying and facilitating other

potential interviews.

Bernard and Ryan (2010) refer to this type of sampling as 'judgmental' (2010, p. 361) and, according to Bryman (2004), this kind of sampling is in effect planned and aims at setting up a connection between the research questions and sampling. Similarly, Bernard and Ryan (2010), Boeije (2010) and Silverman (2006) confirm that purposive sampling consents the researcher to choose a case because it shows some characteristic or practice in which he or she is interested. More specifically, the researcher uses this kind of sampling to interview and approach people who are relevant to the research questions.

In conclusion, the researcher aimed for the most appropriate combination of sampling forms with which to approach potential participants; and sampling frames fit for the research's purpose.

As a result of these different sampling approaches, nineteen (19) semi-structured interviews were conducted with senior officials and executives in the oil and gas industry: particularly with HR, Training and Development professionals, as well as senior officials in the engineering colleges, ministries and other interested parties over the research period.

Eighteen (18) structured interviews were also conducted with engineers who had already spent 3-5 years in the industry. In addition, a total of 85 responses to the self-completion questionnaire were received, consisting of thirty-six (36) responses from the early-stage engineering students sub-group (1st or 2nd year at the engineering school); twenty-seven (27) responses from the final stage engineering students sub-group (4th or 5th year at the engineering school); and twenty-two (22) responses from the fresh engineers sub-group (1st

or 2nd year in the labour market, specifically within the oil and gas industry).

At a later stage, to learn more about the relationships between the high schools, the engineering institutions and the employers and gain a better understanding of the factors that may play a role in high school students making their decisions pertaining to their field of study, one more questionnaire targeting the final stage high school students was introduced.

This questionnaire was distributed to a number of high school students through the academic advisors interviewed, from which fifty-one (51) responses were received: resulting in a total of 136 responses to the different self-completion questionnaires.

In order to provide an even clearer picture, three (3) more structured interviews were also conducted with academic advisors/officials from three different high schools: two of which were boy's schools; the other was a girl's school.

In conclusion, this research allowed for utilizing different research methods, as well as utilizing different sampling types, which ultimately allowed for covering the different STWT stages within the different levels and among the different stakeholders.

5.6 RELIABILITY AND VALIDITY

Although as Bryman (2008) notes, many qualitative researchers tend to employ the terms pertaining to reliability and validity in very similar ways to quantitative researchers when seeking to develop effective assessment criteria, there was no such consensus among qualitative researchers about the criteria for judging the quality of a piece of qualitative work.

Regardless of the terminologies employed, the assessment of quality has to do with the extent to which the findings can be trusted and generalized in reflecting the searched area(s) on the one hand; and that to which such research can be replicated by other researchers, on the other. These are two key issues for which it might be quite difficult to devise straightforward standardized assessment criteria: it may have much to do with the nature of research, the type of research, the role of the researcher and, more importantly, the social context within which the research is conducted.

From the perspective of this research, the findings of the interviews have been a result of an extended exercise among the key stakeholders: which makes their generalization reasonable, despite the samples being purposive and convenient. The generalization level of the findings associated with the self-completion questionnaires related to the engineering students (at their early and final stages) is presumed to be significant, as the sample has randomly covered engineering students at the three engineering schools operating in Qatar.

However, this might not be the case for the sample pertaining to high school students, as this tended to be more of a 'convenience sample': access to these students came as a result of interviewing academic advisors at their respective schools, while it was clear to the researcher that the actual population of this sub-group is much larger than that covered in the sample.

As far as replication is concerned, as with most qualitative research, the possibility might not be particularly significant; however, the researcher did his utmost to make the research process and procedure as clear as possible, so

that replication by other researchers would be achievable.

5.7 PILOT SURVEY AND QUESTIONNAIRE PRE-TESTING

Performing a pilot test of the research instruments is an important, useful aspect of the research process (Bryman, 2008). A pilot survey can particularly be useful for the researcher in:

- Ensuring that the adopted research instruments are working well for the intended purpose

- Ensuring that the research questions are suitable for collecting the sought data, which could even be more crucial when a self-completion questionnaire is being used in the survey process.

In line with the above, the researcher performed a pilot survey prior to commencing the main survey, in order to examine the effectiveness and suitability of the developed research instruments in obtaining the information. The sample for the tests comprised individuals from each of the categories that the research was intended to cover.

Upon obtaining ethical approval from Leicester University to proceed with the survey, three (3) pilot interviews were performed. These were very useful in that they allowed for a better realization and appreciation of the way in which the senior officials and executives should be approached, the questions to be asked during the interviews, and the way that interviewees' responses should be noted and then transcribed.

At the same time, a pilot sample of ten (10) questionnaires were communicated to potential participants of each sub-group of students as well as the fresh graduates: to verify the suitability of the questions and the completion time, in

addition to obtaining an initial indication of the response rate. The distribution of these questionnaires to the potential participants was performed through two engineering colleges, out of the three operating in Qatar.

The result of these pilot interviews and the questionnaire pre-testing was encouraging: the response rate to the questionnaires reached 80%. The results of the pilot survey urged the researcher to introduce some amendments to the questions for both the interviews' guides and the questionnaires, in addition to revisiting the list of people to be interviewed and the most appropriate way(s) for approaching them.

One more benefit of the pilot survey was that it assisted the researcher in aligning himself with the requirements of the one-to-one interviews, particularly with regard to scheduling and following-up interviews, interview duration, note taking and outcomes recoding

5.8 FIELDWORK EXECUTION

After performing the pilot survey, a timetable was drawn up to conduct the interviews and distribute the questionnaires. This allowed for six (6) months to complete the process; however, in practice, it took approximately eight (8) months, as some interviews had to be re-scheduled several times based on the availability of the interviewee concerned, in addition to one extra month at a later stage to organize, execute and follow-up on the focus group session.

One additional factor that resulted in extending the timeframe was the need to learn more about career guidance at high school level: for which the researcher had allowed by introducing three (3) more structured interviews with academic

advisors and officials at three (3) high schools (two for boys; one for girls), in addition to minor customization and distribution of a self-completion questionnaire to cover a sample of the high school students at these three schools.

The major fieldwork commenced after considering the outcomes of the pilot survey. The interviews took a long span of time, spread over 8 months: due to the researcher dealing with senior officials in various areas; however, for the self-completion questionnaires, the timeframe was shorter, and lasted approximately 4 months.

It was anticipated that interviews with senior officials at the universities, oil and gas organizations and other concerned authorities would form the key to proceeding with the self-completion questionnaire distribution. This indeed proved the case, as the researcher was able to proceed with the questionnaires after having access to distribute them through employers and educators within 4 months of the commencement of the interviews. This allowed the questionnaires to run in parallel for a period of 4 months.

In fact, gaining access was not the only reason to allow for a gap between starting the interviews and commencing the questionnaire distribution, as it was anticipated that some interview outcomes would contribute to the final version of the questionnaires and might raise some additional issues to be addressed.

The focus group session with policy-makers and career guidance decision-makers was arranged in cooperation with Qatar Career Fair under the umbrella of 1st Qatar Career Forum which took place in May 2015.

Considering the additional one month for the focus group, a total duration of 9 months was allowed for the entirety of the fieldwork.

Performing the One-to-One Interviews:

From the beginning, the researcher recognised that arranging, scheduling and conducting the one-to-one interviews would be the most difficult and challenging portion of the fieldwork, which indeed proved the case, especially with the senior individuals. Ultimately, communication and follow-up efforts with potential participants resulted in 19 semi-structured interviews in addition to 21 (18+3) structured interviews, conducted over a period of 8 months. These allowed for open, but focused, discussions with the interviewees, which has certainly enriched the research outcomes.

In these interviews and in order to give confidence to participants and persuade them to share their own views and experiences, the 'phased-assertion probing technique' was often used during interviews, since with this technique the researcher shows people that he or she already has a little bit of knowledge on their experiences, thus encouraging them opening up more (Bernard and Ryan, 2010, p. 33).

One interesting area found to be quite helpful in terms of facilitating the interviews was that of attending relevant conferences and forums: such as the Annual HR Strategies in Oil, Gas and Petrochemicals Forum; Annual Managing Local Talents Conference; Annual Best HR Practices in Oil, Gas and Petrochemicals Conference; and Annual Qatar Career Fair. These proved useful in terms of networking and interacting with key people associated with the research area; many of the interviewees were initially approached through

these events.

Appendix 14 provides an example of the introductory e-mail used to arrange the semi-structured interviews, which in most cases had been preceded by a phone call or casual meeting during a conference or forum.

Performing the Focus Group Discussion:

One of the semi-structured interviews, with the Director of Qatar Career Fair (QCF), enabled the establishment of a permanent communication channel between the researcher and the interviewee's organization as a result of a common interest in exchanging views and ideas pertaining to the key themes of the research and other relevant matters.

This relation has then developed to cooperation in several initiatives that are related to career guidance and development in the state.

In January 2015, the researcher was invited by QCF to join the Strategic Planning and Technical Committee assigned to design, steer, identify themes, and ensure interactive engagement approach and participation in the 1st version of Qatar Career Forum delivery.

In May 2015, the researcher participated in the forum as moderator for the policy-makers and career guidance decision-makers focus group.

The overarching objective of the Qatar Career Forum and the Focus Group Series was to enable QCF to connect with, engage and learn from diverse career stakeholder groups – as expert providers, practitioners, clients and beneficiaries - to help develop a strategic, inclusive, enhanced and informed

approach to career guidance and workforce development, in Qatar.

Each Focus Group session was targeted at specific stakeholders and encouraged engagement, collaboration and knowledge exchange between participants by focussing on a series of key themes, interactive Q&A and debate, regarding the current state of careers guidance and training in Qatar.

The particular focus group that was moderated by the researcher aimed to identify what more needs to be done with regards to capacity building, institutional, systemic, program or behaviour, to move towards a national career guidance and workforce development culture and community of stakeholders, including policies, frameworks, procedures, guidelines. Further attention during this group discussion was given to the participants' views on how to enhance 'motives from within' among students and graduates to enhance their engagement and performance levels.

This focus group session was attended by 17 participants consisting of policy-makers and career guidance decision-makers representing a variety of regulatory bodies and governmental organizations in Qatar, specifically the Supreme Council for Planning, Supreme Council for Education, Ministry of Labour, Qatar Foundation and Ministry of Administrative Development.

The session was recorded in a form of minutes report included the key discussion points, issues, challenges, concerns, opportunities, ideas, outcomes, suggestions for next steps and recommendations raised during the discussions.

One week after the session, a draft report was issued by the moderator to all

participants for review and comment. A validation session was conducted one week after circulating the report for final comments and discussion of the report.

Performing the Self-completion Questionnaires:

As mentioned earlier, four types of questionnaire were prepared to cover the 4 sub-groups of students and graduates: with those related to engineering students (2 sub-groups) and fresh engineers (1 sub-group) made in 2 versions, to enable the researcher to distribute them through educators and employers, without duplicating the responses.

Appendices 1-7 illustrate the questions used in these self-completion questionnaires, whereas appendices 17 and 18 illustrate the method of approaching participating educators and employers to communicate these to potential participants.

The researcher used a web-based enabled solution (SurveyMonkey) for the self-completion questionnaires: which proved quite economical and fit for purpose.

Performing Direct Observation:

Many of this project's elements were associated with the researcher's daily business activities and interactions, which allowed him to capitalize and use his own observations as another source of data. On many occasions, the researcher took notes on anything which could be relevant to the data during meetings, site visits and day-to-day business interactions. The researcher's association with the business world allowed in many cases for a smoother approach to be adopted towards many parties: particularly within the oil and gas industry.

5.9 ETHICAL ISSUES

Boeije (2010) tells us that all research deals with an array of ethical dilemmas, and May (2011) suggests that values and bias may guide the research process in what can be unanticipated or unrecognized ways. Ethics are fundamental in maintaining the integrity and legitimacy of research in society and protecting practitioners and participants.

Barnes (1979) defines ethical decisions in research as those which 'arise when we try to decide between one course of action and another, not in terms of expediency or efficiency but by reference to standards of what is morally right or wrong' (Barnes, 1979, p. 16; cited in May, 2011, p. 61). In this regard May (2011) argues that Barnes (1979) makes a distinction here by basing ethical decisions upon principles rather than expediency. May (2011) also illustrates that ethical decisions are not being defined in terms of what is advantageous to the researcher or the project upon which they are working, as they are instead concerned with what is right or just: in the interests of not only the project, its sponsors or workers, but also the participants in the research and the role of research in society.

Gewirtz and Cribb (2006) argue that an ethically reflexive view implicates that social researchers ought to be willing to cultivate their beliefs in a way that is reactive to, and learns from, the hands-on impasses confronted by those working in the social milieus being studied (Gewirtz and Cribb, 2006, p.150). This means that sociologists are required to find the means for self-consciously and analytically tackle objectivity in the description and explanation of the research data and consistency of their beliefs (Gewirtz and Cribb 2006, p. 142).

In fact, (Hammersley, 2004, cited in Gewirtz and Cribb, 2006, p. 144) argues that social researchers should endeavour to retain a rift between facts and values and to avoid their values from distorting the facts. Boeije (2010) adds that it is important for researchers to be conscious of their personal occurrences, outlooks, emotions and thoughts, and to be able to surmount any potential preconceived notion that may be the source of these (Boeije, 2010, p. 175). Similarly, Bernard and Ryan (2010) argue that in order for the researcher to obtain a thorough understanding of the phenomena, he or she is required to put aside his or her biases so as not to sieve the participants" experiences through the researcher's own cultural vision (Bernard and Ryan, 2010, p. 259).

5.9.1 Particular Ethical Issues Related to this Research

In fact, this reminds us of the previous discussion under section 5. 3 with regard to the relationship between values and the research process, as well as that pertaining to the rationale behind selecting the particular research methods and instruments for this research.

As noted earlier, one ethical concern was not to intrude on the participants, particularly the female ones, through one-to-one contact. The researcher's perception was that female students would be accustomed to less interaction with males within the Qatari education system, both at high school and university, when compared to the labour market environment; hence, he tried to keep the one-to-one interviews limited to the senior participants, only after obtaining their permission first.

The same concern applied when conducting the interviews. The researcher endeavoured his utmost to avoid introducing elements or raising questions that

might be regarded by participants as an intrusion. One of these elements was that of taping the interviews: during the pilot survey, interviewees were reluctant to have the interviews taped. For this reason, the researcher decided not tape the interviews.

It was also anticipated that the willingness of senior officials to discuss the shortcomings in the state strategies or policies thought to be a potential area of sensitivity. Revealing such views or making such statements could reflect negatively on them within their own organizations.

Similarly, at an individual level, it was anticipated that some Career Advisors at schools may not have formal qualifications in their fields, therefore may feel threatened during any type of discussions related to qualifications. Revealing such type of information could cause embarrassment to these Career Advisors.

Also at an organisational level, when it comes to collection of data from HR managers and Training & Development managers pertaining to training and development activities, as such information could be considered sensitive and confidential by these managers.

For the self-completion questionnaires, no direct approach was made to any of the participating sub-groups and their details were not required: something that was communicated to the employers and educators concerned.

The researcher was also fully prepared to apply for formal consent from participating educators and employers, who voluntarily allowed for receiving and distributing the survey links to their students/graduates. However, among the approached educators and employers, the researcher was not requested to

complete any particular consent, other than sending an e-mail message illustrating the purpose of the survey and providing the assurance that the collected responses from students/graduates would be used strictly for the purposes of this research.

5.9.2 Dealing with the Ethical Issues:

The issues raised above are peculiar to this research and had to be addressed by the researcher. Meanwhile, it was recognised that the use to which the research data will be put would be of concern to those who took part in the research and would also influence their decision as to whether or not to take part.

Accordingly, and while interacting with the participants, it was emphasized that their responses would be treated with full confidentiality, and that it would be strictly limited to the purpose of this research.

The interviewees were assured that their identities would not be disclosed under any circumstances. An exception to this was sought and obtained from the Director of Qatar Career Fair, due to the significant amount of input and discussion related to QCF in this study.

Perhaps due to cultural background, as noted earlier, most interviewees were not willing to accept any type of recording: whether voice or video. The same perception was there at the early stage of the research and confirmed during the pilot and main interviews. Thus taking notes and transcribing them was the main approach of recording the interview output.

At the same time, reviewing the notes by the interviewees immediately after the interview was disregarded; this was tried during the pilot survey and found to be

non-practical, as it would require additionally clear handwriting as well as explicit and detailed notes for the interviewee to be able to review.

Moreover, it would require extending the interview duration, thought likely to make interviewees feel uncomfortable, and would not allow the interviewee to review the outcomes at their convenience, again considered likely to leave them feeling uncomfortable.

Accordingly, interviewees were asked to review and confirm their agreement to the interview summary, which was prepared and communicated to each interviewee within a week of the interview. The researcher was therefore careful to note down a summary of the interview and transcribe it in detail immediately afterwards.

For each interview, the researcher allowed at least one hour immediately afterwards to sit and write down the outcomes in detail. These notes were then properly organized, produced and communicated to the interviewee within a week, to obtain their agreement on the output.

This sort of documenting, communicating and confirming the interviewee's agreement on the interview summary contents aimed to achieve two main goals, first, to ensure that any interpretation made by the researcher of the contents of the interview or statements made by the interviewee was correct and accurate, and second, to maintain a high ethical and professional approach with the interviewees and ensure their confidence that not a single statement would be utilized for the research without their prior agreement. This was well received by the interviewees and found by the researcher to add value to the interviewing, transcribing and analysing processes.

Appendix 15 represents a sample interview summary completed directly after the interview and sent to the interviewee for review and agreement. Appendix 16 represents a sample email used to obtain agreement on the interview summary.

Furthermore, it was explained to the interviewees how the data might be disseminated when the research is complete. Finally in relation to building trust, it was made clear to the participants that they could withdraw their responses at any stage of the process.

Apart from building trust, the most important thing was to assure the participants that any identifying data would be removed from the results, both for individuals and for organizations.

In line with that, and as will be further explained in section 5.10, identification code was assigned for each interview: indicating the sector, the serial number and the date/time of the interview, keeping the identity of individuals and organizations anonymous. For example, 'EMP 03, 2011' denoted the third interview with a senior official or executive from the employers' side, conducted in 2011.

In conclusion, this research is carried out within the framework of the University of Leicester Research Code Of Conduct. Thus, it was clearly communicated to all concerned with the research that:

- A top priority commitment of the research at all stages was not to result in any type of harm whatsoever to any of the participants in the research process.

- Respondents would be allowed to drop out of the study if they decided to do so.

- All respondents would be anonymous; and confidentiality would be strictly protected.

- Acquiring data could only be done after obtaining the applicable legal/formal permits (if any) to do so.

- Data collected/obtained should only be used for the intended purpose of the research; and should not, by any means, or under any circumstances, be used for something else.

5.10 DATA COLLECTION AND ANALYSIS

The nature of qualitative data, which in most cases take the form of textual material, constitutes a significant challenge in selecting the most appropriate approach. Bryman (2008) suggests that qualitative data 'are not straightforward to analyse. Moreover, unlike quantitative data, clear-cut guidelines about how qualitative data analysis should be carried out have not been developed (Bryman, 2008). Taylor-Powell and Renner (2003)'s view is that the analysis of qualitative data 'requires creativity, discipline and systematic approach. There's no single or best way'.

In this research, the qualitative data is presented thematically as a narrative combined with direct quotations from respondents based on the interviews.
All the data was carefully read and then coded and organized by the researcher. According to Silverman (2006), by coding data social scientists illustrate how theory can make the data analysis. This coding approach binds

the analyst to fragment the content into pieces, to contrast them and to allocate them to groups that concentrate on the same topic are fruitful (Boeije, 2010, p. 96; Silverman, 2006, p. 388).

5.10.1 Data Coding

Despite the management of the data, particularly the summaries from the interviews and the researcher's direct observations, comprising one main concern for the researcher, data coding was not seen as serving this limited, albeit important, purpose. Rather, it was used for the process of establishing the main headings under which the analysis would be performed.

Data coding (or indexing, as some prefer to refer to it), helped the researcher 'alleviate the feeling of being swamped by' the collected data (Bryman, 2008). It further helped pay more attention to some aspects that seemed of more significance to the research question and key themes.

For the purpose of keeping the responses organized, the interviews were listed on an Excel sheet that included the full details of the interview/interviewee with an identification assigned for each interview: indicating the sector, the serial number and the date/time of the interview.

For example, 'EMP 03, 2011' denoted the third interview with a senior official or executive from the employers' side, conducted in 2011. In the same manner, the three letters 'EDU' were used to indicate an interviewee from the education sector; 'OCP' indicated 'Other Concerned Party' such as regulatory authorities; 'TRE' indicated Transitioned Engineer; 'HSA' indicated 'High School Academic Advisor'. Similarly, 'FG, 2015' was used to denote the focus group session that

was held in 2015.

The key themes within the interview summaries were identified and linked to each other under codes (i.e. key headings) for further analysis, taking into account that such 'fragmentation of data' (Coffey and Atkinson 1996; cited in Bryman, 2008, p. 553) was not seen by the researcher as posing a risk of losing the context or narrative flow of the interviews, these being two main concerns with coding. The reason for this was that the interview summaries and recorded observations were continually consulted and referred to during the course of data analysis under the identified codes.

A similar approach was applied to responses to the self-completion questionnaires. The web-based solution (SurveyMonkey)'s features enabled the keeping of basic statistics related to the responses to each distributed questionnaire; and downloading these results in the form of tables and pie charts for further interpretation.

5.10.2 Thematic Analysis

Though some writers suggest this is not an approach to analysis with an identifiable heritage or which has been outlined in terms of a distinctive cluster of techniques (Bryman, 2008, p. 554), the nature of the research questions and the key research themes, as well as the questions utilized during the interviews and within the questionnaires, did allow the researcher to draw clear headings: under which participants' responses could be clustered to address distinctive topics and issues found to be clearly associated with the key research themes, and to serve the purpose of addressing the research question within the research theoretical framework.

A running log was kept throughout the research study period: a useful means with which to start identifying the key running themes under which the responses of interviewees, the researcher's direct observations and other useful data could be clustered and built into a narrative to address the research sub-questions in light of the theoretical framework.

The researcher depended on engaging a sense of argument and critical analysis, in order to establish a clear understanding that would address the research sub-questions. In many cases, official statistical data proved a useful element to engage within the data analysis, and build on the overall argument.

The same thematic approach was employed to analyse and identify perceptions, attributes and trends among students and graduates. The responses obtained through self-completion questionnaires were discussed under the same themes associated with the interviews and the researcher's direct observations.

The researcher was well aware of the influence that his own values, beliefs and perceptions might have on the overall research outcomes: so made the greatest possible efforts to avoid influencing the final results of the analysis with pre-set assumptions or perceptions; and to address the observations, suggestions, interpretations, findings and conclusions with full consciousness of his own values and others' values and perspectives, in line with the previous suggestions of (Gewirtz and Cribb 2006; Boeije 2010; Bernard and Ryan, 2010; Bryman, 2008 and May (2011).

5.11 LIMITATIONS OF THE RESEARCH DESIGN

Though the research project was accomplished within the anticipated framework, it is necessary to highlight some limitations which became apparent to the researcher during the course of the project.

The research design of this study is in the form of an exploratory research. It is often argued that one of the major limitations of an exploratory study is that does not allow for definite answers, however, there is still a significant opportunity that this study offers appropriate understanding of the phenomenon in depth and comprehensively under study.

Furthermore, and as emphasized earlier under section 4.5, the adopted theoretical framework, thus the selected research design, will enable exploring the areas that require attention from the education sector and employers to minimize the obstacles associated with the transition process, as well as identifying potential models which both help explain and can aid in facilitating the school-to-work transition and enhancing the engagement levels of graduates with the labour market.

Though, the research attempted to be comprehensive in covering the STWT process from the different transitional stages and stakeholders' perspectives, it only allowed for the taking of 'snapshots' of the transition process: that is to say, taking a sample of each stage of the transition process and targeting a purposive sample of the stakeholders. This limitation owed to time and other practical considerations.

One other limitation associated with the labour market information, as in the case of Qatar, there is unfortunately a lack of a national framework/source for

this (World Bank, 2005, p. 24), resulting in some conflicting information on certain occasions.

Associated with the labour market information as well as the ethical issues for this research, some senior officials are just not used to dealing with researchers and are reluctant to take part in an interview, or release any piece of information, even if the same/similar piece of information is publically available, which may imply a question mark over the commitment of such senior officials or executives towards research and development (WB, 2005, p. 90).

5.12 SUMMARY

This chapter provided a brief review of social science research methodologies in order to support the decisions that were taken on the research methodology and methods. A description of the deployed methods was also provided, and details of how the research instruments were pilot tested were outlined as well.

A description of the sample types and the justification for utilizing these types of samples was discussed. The ethical issues that were considered during the research were also covered and how these issues were dealt with.

The chapter provided an illustration for thematic analysis approach, this approach was selected to interpret and analyse the collected data in light of the theoretical framework.

The chapter was concluded with discussing the limitations and issues encountered during the execution of the research.

The following three chapters, forming Part 4 of this study, will present and

discuss the outcomes of the research survey, the findings, conclusions and implications for theory and policy.

PART 4: DATA ANALYSIS, FINDINGS AND CONCLUSIONS OF THE RESEARCH

CHAPTER 6: DATA ANALYSIS AND FINDINGS

6.0 INTRODUCTION

This chapter set out the data from the one-to-one interviews, focus group discussion, questionnaires and observations.

The data is analyzed and illuminated through the selected theoreticial lenses and discussed under two main analytical, thematic headings: the interacting roles of key stakeholders towards facilitating the school-to-work transition process; and towards enhancing the national capacity building and the engagment levels through the promotion of intrinsic values.

This Chapter starts by drawing out the key findings regarding the first two themes noted above. It moves on to set out this thesis' two original contributions to knowledge, derived from the discussions and findings: the Stair of Employability; and the Principle-Based Career Education. The former explains the STWT process; the latter enables the promotion of intrinsic values, and hence, effective national capacity building in the Qatari oil and gas sector.

Based on the findings, the thesis is also able to provide a refined, updated definition of employability; and discuss how the roles of educators, employers, graduates and governments interact overall the STWT process. It concludes by summarising those significant issues which still require the attention of policymakers and other concerned parties.

6.1 TOWARDS FACILITATING THE SCHOOL-TO-WORK TRANSITION PROCESS

In Chapter 4, it is learned that the responsibility for building graduates' skills and preparing them for the labour market does not lie with one party only, but rather, need to be built and developed, through integrated and combined efforts

from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012).

In fact, the state must strive for a form of national partnership that allows for effective contribution in skill formation and productivity enhancement from all stakeholders starting from early schooling and continuing as an individual grows up, with systematic 'conscientious support' from parents to their children (Nazli, 2007, p. 446).

The following sections illustrate the key features of engineering education output in Qatar, the attributes of training and development input within the oil and gas industry and the engineering graduates' labour market orientations and trajectories.

Analysis are then provided for the relations between high schools and the other two significant elements in the 'transition equation', engineering education providers and oil and gas employers, including the way(s) these high schools prepare their students for the higher education stage as well as the labour market.

The analysis further addresses the relations between engineering education providers and oil and gas employers, and how these may contribute to skill formation and career development.

6.1.1 The Output of Engineering Education

When compared with the last two decades, the overall knowledge and competence level of engineering graduates seemed to be improving; this includes the level of theoretical knowledge related to the engineering disciplines

within the oil and gas industry as well as the soft skills pertaining to communication and presentation, something that seems in line with Kivinen (1997): whose work illustrated that the business community expects universities to equip graduates with adequate 'tools/skills' to minimize the 'learning curve' at the workplace.

It is confirmed by different interviewees from both education and industry sectors that the overall knowledge and competence level of graduates in the different disciplines, including engineering graduates, seems to be improving, particularly since the education reform process began in 2003. This improvement was confirmed by all interviewees from the education sector.

The Associate Dean of Academic Affairs (EDU 02, 2011) of a key engineering school in Qatar stated that:

> '*For the last 6-7 years, we are providing our students with a high-class education and equip them with the skills and competences that boost their competitiveness in the labour market*', (EDU 02, 2011).

EDU 02, 2011 further emphasised that their
> '*Engineering school brings an international standard of engineering education, keeping the local values and the Qatari labour market needs in front of our eyes, in fact we're highly influenced by the local needs*'.

This certainly tallies with Kivinen (1997)'s study noted above. Kivinen suggested that quality education is a more essential prerequisite for today's graduates than ever.

Moreover, the introduction of the North Atlantic College and the Texas A and M in Qatar in 2007 (joining the engineering college at Qatar University) enabled local students to acquire international quality standards, adapted to local market needs. This contributes to the attainment of a key aspect of QNV 2030 pertaining to Human Development: 'An educated population with world-class education' (GSDP, 2009, p. 5).

Most interviewed managers and executives within the oil and gas industry confirmed that graduates from international engineering schools tend to have higher theoretical knowledge, better command of the English language, and better presentation and team-playing skills when compared with those who have graduated from the local engineering schools, although it seems that the gap is shrinking day by day.

Meanwhile, local graduates seem to enjoy the privilege of 'familiarity with the industry, as a result of the collaboration evolving between the latter and local engineering schools (EMP 01, 2011):

> '*Engineers who have graduated from international schools normally have high command of English which is quite important in our industry, they normally have excellent presentation skills as well when compared with the engineers who have graduated from the local engineering schools, although the recent few years have proved those graduating from the local engineering schools to be quite close to those graduating abroad, more than that, those who are graduating locally are having the privilege of being more familiar with the local industry and most of them had some practical exposure to the industry during their studies*'.

On the question of final-stage engineering students' perceptions of university teaching effectiveness, these students' views were positive: two-thirds believed that the teaching at their respective universities was very effective; one-third that it was moderately effective. This was in line with the views expressed by interviewees from the education sector and the labour market.

At the same time, when we compare the perceptions of the final-stage engineering students with those of the fresh engineers in the labour market (Figure 6.1), it is apparent that the latter had more conservative perceptions about the effectiveness of teaching at their respective universities, which could have been a result of encountering some sort of irrelevance/disconnect between theory and practice.

Figure 6.1: Engineering Graduates' Views about Universities' Teaching Effectiveness Universities (Source: The Author's Survey)
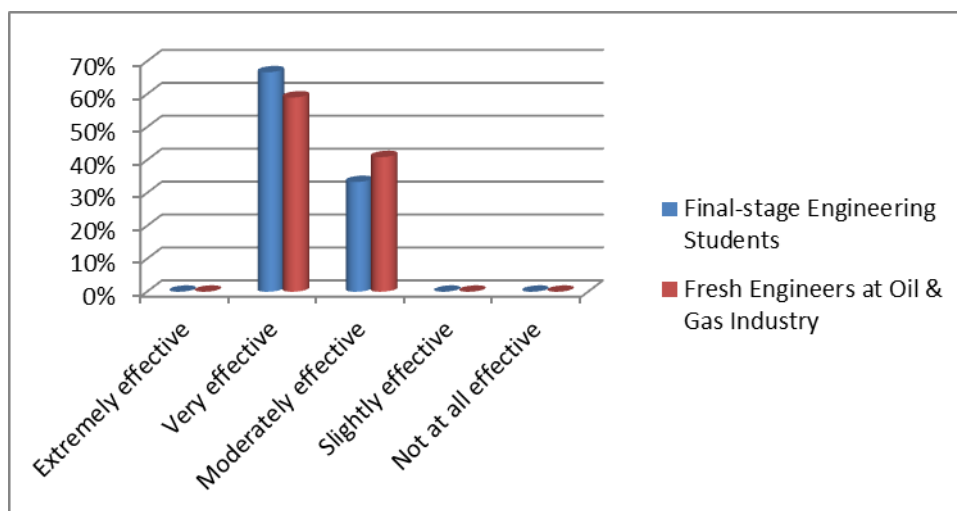
When the overall picture of the skills and competence level of these graduates is compared with the key 'transferable' soft skills and competencies integral to graduate employability (Andrews and Higson, 2008, p. 413) as discussed in Chapter 3, it is found that many of the skills related to theoretical knowledge,

communication and information technology have been absorbed by the fresh graduates as they head into the labour market, as confirmed by the HR Manager of one of the oil and gas companies:

> '*Perhaps around ten years ago there was a gap between the theoretical knowledge that fresh engineers are coming with from universities and the practical requirements of the industry, however, this gap does not really exist these days*' (EMP02, 2011).

Unfortunately, this is not the case with other skills more valued by the labour market: such as willingness to learn and accept responsibility, ability to work under pressure, or ability to plan and think strategically. The Learning and Development Manager of a key employer in the oil and gas industry explains:

> '*One main aspect of our development strategy is "Individual Responsibility", where the company makes it clear to the individual that the company will give a systematic and comprehensive support to the under-development employee, however, the responsibility for making use of and capitalizing on this support remains the employee's responsibility in order to establish a sense of responsibility among the employees, this in fact emerged due to the fact that in many cases we find the newly graduated persons are lacking the willingness to take responsibility for themselves and for their work*' (EMP 01, 2011).

This confirms that the education process should not only allow for building theoretical/technical knowledge, which is certainly important for any business, but strive to build human aspects of the individual in line with the suggestions of (Ashton and Green, 1996): 'Education for citizenship, or for personal self-

fulfilment in this life, has always been and should remain central to the objectives of any desirable skill formation system' (p. 3).

In fact, building a sense of responsibility is a key in enhancing the output of any skill formation or development process, which would certainly help in illuminating the 'black box' of Ashton and Green (1996).

A possible area of concern in the educational process at universities, which perhaps has much to do with career education provided at these universities, is the relationship between the university and its graduates: according to the responses, this relationship does not seem as strong and effective as it should be.

According to the questionnaire survey, approximately 46% of graduates are disconnected from their universities after graduation within the first one to three years; yet these three years are a crucial period in which universities can obtain feedback from their graduates and feed this into their curricula, teaching methods and career advisory services, as well as (perhaps most importantly), their relations with the labour market.

Concluding Remark:

There seems to be no significant concern with the teaching effectiveness provided by the engineering schools, particularly with regard to theoretical knowledge, communication and information technology skills provided to their graduates; however, this does not seem to be the case when it comes to other skills more valued by the labour market, such as the willingness to learn and

accept responsibility, the ability to work under pressure or the ability to plan and think strategically, something that recalls the importance of having the educational institutions, including schools, fostering 'critical thinking, problem-solving, and the innovative use of knowledge to prepare students for college and career', (White House, 2010, para. 4, cited in Anctil et al., 2012, p. 109) and other business-skills as discussed in section 4.3.1.

.

Meanwhile, there seem to be weak links between universities and their graduates, as major percentage of graduates are disconnected from their universities after graduation, and that is within the first one to three years, where in fact these three years could be one of the most crucial periods for universities to obtain the feedback from their graduates and feed into their curricula, teaching methods and career advisory services, as well as (perhaps most important), their relations with the labour market, whereas it is emphasized in this study that the role of colleges and universities should not be limited to the teaching activities within the limited 4-5 years of studying, rather it should extend over the career life-cycle of a student in interactive manner within a social dialogue as suggested by Cummings and Jecks (2004).

6.1.2 Transitioning into the Oil & Gas Industry

The interviews conducted with the HR Managers and Training and Development Executives suggest that almost every company within the oil and gas industry has attractive learning, training and development plans for fresh engineering graduates, as well as other fresh graduates in other disciplines. These programmes are used typically to develop employees and attract

potential ones.

Many companies have a structured development programme: whereby an experienced mentor is assigned for each fresh engineer and utilizes a Professional Development Plan (PDP). The PDP describes all competencies required for the fresh engineer to become fully competent at a professional level.

From the training perspective, some companies adopted an 80:10:10 developmental approach with their under-development engineers: 80% of the training is received on the job, 10% through mentoring and 10% classroom training (internal or external). Others adopted an 54:10:18:10:8 developmental approach: 54% of training is received on the job, 10% through projects, 18% through observation and mentoring, 10% through classroom training (mandatory), and 8% through classroom training (technical).

Meanwhile, most of the interviewees in this sector believed that qualified and passionate mentors are important in any training and development programme's success. In many companies within the oil and gas industry, mentors are also given training, incentives and encouragement to deliver, without negating the crucial importance of the training content and the employee's individual responsibility towards the end results of the development plans/programmes (EMP 06, 2011).

The majority of transitioned engineers (slightly above 80%) confirmed that the oil and gas industry does provide rich and advanced learning and development opportunities for its employees, allowing at the same time for establishing a reasonable concurrence with the views of the employers themselves. However,

the key difference between transitioned engineers and employers was over the ability of the industry to remain attractive for freshly employed engineers, or even sustain those already in employment.

The following views represent a question mark about the industry's ability to maintain its competitiveness in this 'talent war', and continue being attractive to fresh engineering graduates as well as current employees:

> *'I believe that oil and gas is a professional sector, and allows for the engineer to acquire many skills in a short period, which can even help him to get a better employment and position in other sectors, particularly the Qatar Rail'* (TRE 05, 2011).

> '*The oil and gas industry has certainly been always one of the best professional employment options, if not the best among all, however, perhaps this has started changing recently, with the new emerging organizations'* (TRE 03, 2011).

This is not to deny that some transitioned engineers expressed some concerns over professional development programmes; or argued that these were cosmetic rather than useful in the real world, with many performed for organizational branding purposes:

> '*I believe that many of the training and development programmes being offered are ready-recipes and do not serve the engineer's real development, but rather serve the image of the organization*' (TRE 10, 2011).

Above, the view of TRE 10, 2011 might reflect a 'complaining personality', or even the 'Retreatist' type (Tomlinson, 2007). Although of eighteen (18) interviewed transitioned engineers, only three complained about professional

development programmes, this still merits further investigation, beyond the scope of this thesis.

The Oil & Gas: As Industry of Choice:

In the last few decades, the oil and gas industry in Qatar has had an image of paymaster among all other industries in the market; as well as of professional and punctual work environments. It also had a reputation of demanding, hardworking and relatively aggressive work environments, when compared with other industries. However, it is clearly no longer the only major paymaster; now, a number of rival industries place less expectations on employees, boast more comfortable working environments and perhaps, even fewer responsibilities, which could help explain the following comments from a transitioned engineer in the oil and gas industry:

> '*Why do I have to work in a remote aggressive working environment, as long as I can achieve the same package, if not better, at a nearby location, with much less headache?*' (TRE 01, 2011)

This factor continues to reduce the attraction of the oil and gas industry to some new engineering graduates as well as those in other disciplines. However, some employers argue that it is still attractive for those willing to take their own development seriously and give it everything it takes:

> '*The training and development programmes, career succession and career guidance we're providing in the oil and gas industry cannot be compared with other industries, we are always ahead*' (EMP 05, 2011).

The findings from the interviews conducted with transitioned engineers working

in the oil and gas industry do suggest it is among the most attractive industries for many engineers; however, many also believe that other industries and sectors are coming up in the labour market and have good prospects:

> '*I believe that oil and gas is a professional sector, and allows the engineer to acquire many skills in a short period, which can even help him getting a better employment and position in other sectors, particularly Qatar Rail*' (TRE 05, 2011).

This adds a new challenge to the oil and gas industry. It seems that some engineering graduates wish to join in not with a view to staying there for life, but as a transitional stage in order to gain the essential practical and professional skills within a working environment perceived by others as among the most professional and high standard in the country. After three to five years of working in this industry, the employee would normally have a stronger resume and hence, better options elsewhere.

One such promising industry within the Qatari labour market is the railway industry: completely new to the country, established from day one at world class, state of the art level, which provides major learning, training and development opportunities for its employees, particularly Qatari engineers. As a new industry, it is expected to provide career ladders much easier to climb compared with established, large organizations in the oil and gas industry.

In terms of the responses of engineering students and graduates pertaining to industry determinacy, the majority of early stage engineering students had determined the field they wished to be employed in; however, when looking at final-stage engineering students, they seemed less clear about their labour

market orientation and the industry they were heading towards, in contrary to the suggestions of Super's career choice theory, as it would be anticipated that the determinacy levels would increase among students as they progress with their studies, as more awareness about available options in the labour market would be obtained as per Super's theory (Harris-Bowlsbey, 2012).

Keeping the discussion with the final stage engineering students and trying to establish a link between these findings and those pertaining to perceptions about the labour market prospects of the same sub-group, these appear interrelated: as indeterminacy about engineering prospects might lead to indeterminacy about industry of choice.

Figure 6.2: Industry-Determinacy of Engineering Students (Source: The Author's Survey)
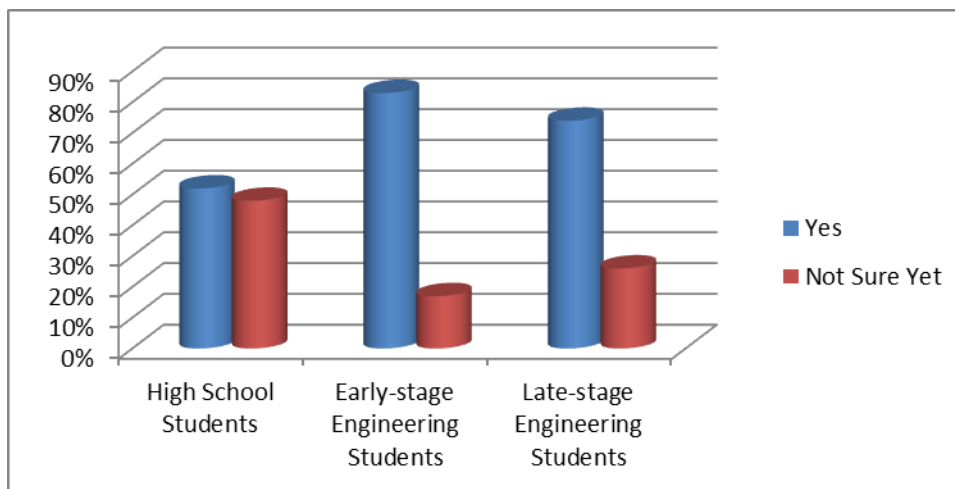
When analysing perceptions of high school and engineering students with regard to industry of choice (Figure 6.3), it can be seen that the oil and gas industry retained this position among a majority of early-stage engineering as well as the high school students. However, again, this does not seem to be the case for later stages: final-stage engineering students responses reveal the lowest level of attraction towards oil and gas (approximately 47%); and the

highest level of indeterminacy (approximately 10%) compared to the other sub-groups.

This raises concerns about the oil and gas industry's ability to maintain its position as an industry of choice, especially when up against increasingly attractive alternative industries. Moreover, when we segregate the results based on gender, attraction levels among female final-stage engineering students tend to become even lower than among the male sub-group: which aligns with earlier discussions (Section 2.1.6) pertaining to female engineers in the industry.

Figure 6.3: Industry of Choice among Engineering Students (Source: The Author's Survey)
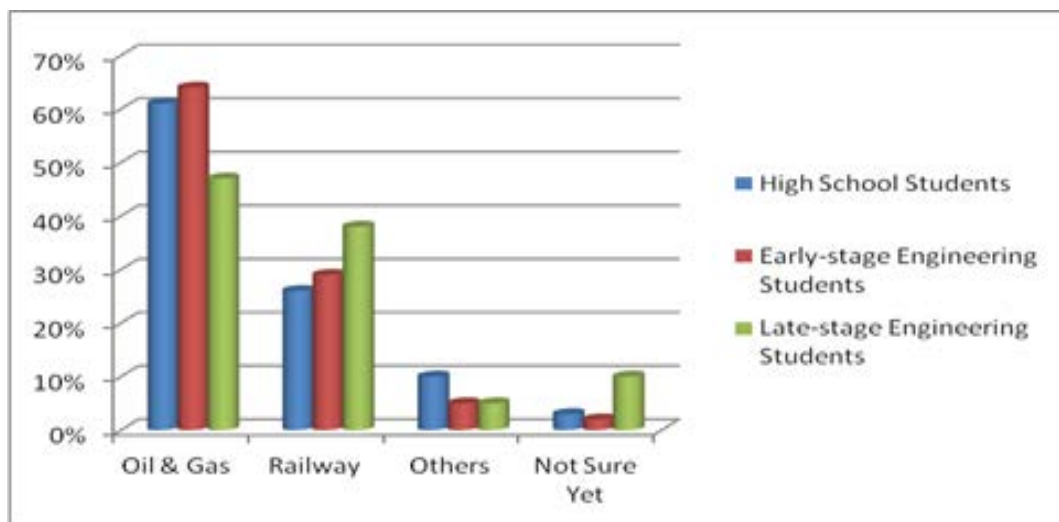
When considering the analysis pertaining to fresh engineers' willingness to sustain their employability with the oil and gas industry (Figure 6.4), the results do not appear very encouraging. Approximately 9% seem to have decided to leave the industry, while approximately 23% are unsure.

Figure 6.4: Willingness to Sustain Employment within the Oil and Gas Industry (Source: The Author's Survey)
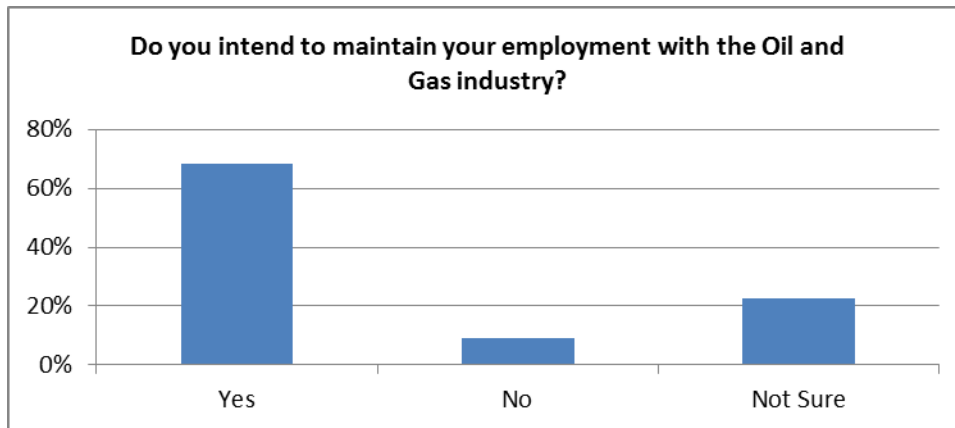
In fact, this raises a concern for the oil and gas industry: what makes 9% of freshly employed engineers willing to leave, and leaves almost a quarter unsure about continuing? It also raises the question whether a non-seamless STWT might have taken place. Moreover, what may happen to those who replied 'No' and 'Not Sure'?

Concluding Remark:

While the findings suggest that the oil and gas industry does provide rich and advanced learning and development opportunities for its employees, the analysis suggest as well that there is an evolving concern about the oil and gas industry's ability to maintain its advanced attractive position as an industry of choice, especially with the progressive positions of other industries within the labour market.

When viewing the analysis pertaining to fresh engineers' willingness to sustain their employability with the oil and gas industry, the results do not seem to be

very encouraging, as it is found that approx. 9% seem to have made-up their minds to leave the oil and gas industry, while approximately 23% of these fresh engineers were not sure whether they were willing to sustain their employment within the oil and gas industry.

When looking at the results from the perspective of perception and aspiration starting with high school students and moving forward through early-stage engineering graduates and reaching to final-stage engineering students, there seem to be a declining aspiration path, in contrary to the suggestions of Super's career choice theory, as it would be anticipated that the determinacy levels would increase among students as they progress with their studies, as more awareness about available options in the labour market would be obtained as per Super's theory (Harris-Bowlsbey, 2012).

In fact, these findings might be questioned in light of the arguments made by (Osipow and Fitzgerald, 1996; Harris-Bowlsbey, 2012; El Rassi, 2011; Nazli, 2007) in section 4.2 with regard to the necessity of developing career maturity of an individual at the right time, that is, the ability to cope well with career development tasks at a later life stage, as these findings might suggest that the career maturity among these graduates is questionable.

On the other one side, and in light of the expectancy theory, these findings might question the motivation levels among these fresh engineers towards the engagement with work at the oil and gas (Lee, 2007; Parijat and Bagga, 2014).

6.1.3 Engineering Graduates: Labour Market Orientations and Trajectories

Pitcher and Purcell (1998) found that, while the majority of the students in their sample displayed a high degree of flexibility in their approach to the labour market, the latter appeared less flexible in its ability to take advantage of the full range of new graduates. In a Qatari context, the case seems to be different, as most executives and officials interviewed in this study stated that the majority of new engineering graduates tended to be engaged in office-related jobs, shying away from fieldwork; and were more interested in managerial rather than technical career paths.

Many employers also believed that fresh engineering graduates tended to pay more attention to monetary benefits and job titles, and make use of the 'talent war' and competition among various employers to hire Qatari employees: particularly in light of the quite low number of graduates compared with labour market demands.

When the CEO of one of the key organizations was asked about the concerns and challenges from an employer's perspective with regard to fresh engineers' transition and engagement, he clarified that:

> 'The cultural aspect could be one of the most challenging aspects in the transition process of the fresh engineers, as some of them tend to take the short cut in their career development instead of giving it what it takes. Some of them pay great attention to the job title and the "package", which can be a challenging element against the real development of a fresh engineer' (EMP 03, 2011).

This does not tally with either Tomlinson (2007) or Pitcher and Purcell (1998) concerning the flexibility of graduates towards the labour market. This was

confirmed by analysing responses of the engineering students and fresh engineers to the questionnaires, particularly in terms of 'career path preferences'. This is not to deny that some engineering graduates can be best described as what Tomlinson (2007) termed to be 'Careerists'; which needs to be understood within Qatari cultural and economic contexts.

Meanwhile, this confirms what was established in Chapter 2, Qataris work primarily in the professional, clerk and associated professions, which indicates an overall tendency among nationals towards in office-related or managerial jobs, leaving the technical as well as field-related sectors inadequately satisfied with local talents and engineers.

The questionnaires sought respondents' perceptions about their prospects in the labour market. It is assumed that perceptions at the final stage of high school have great influence in selecting a major; hence, it was not surprising to find that high school students (in the engineering stream) as well as early-stage engineering students had optimistic perceptions about engineering graduates' labour market prospects.

It would have been even more interesting if we were able to see the changes of these perceptions over time, but that was certainly not possible within this research; nevertheless, perceptions of the final stage students and fresh engineers in the labour market might also give an indication about the changes from earlier perceptions.

Figure 6.5: Engineering Students'/Graduates' Varying Views about Labour Market Prospects for Engineering Professions (Source: The Author's Survey)
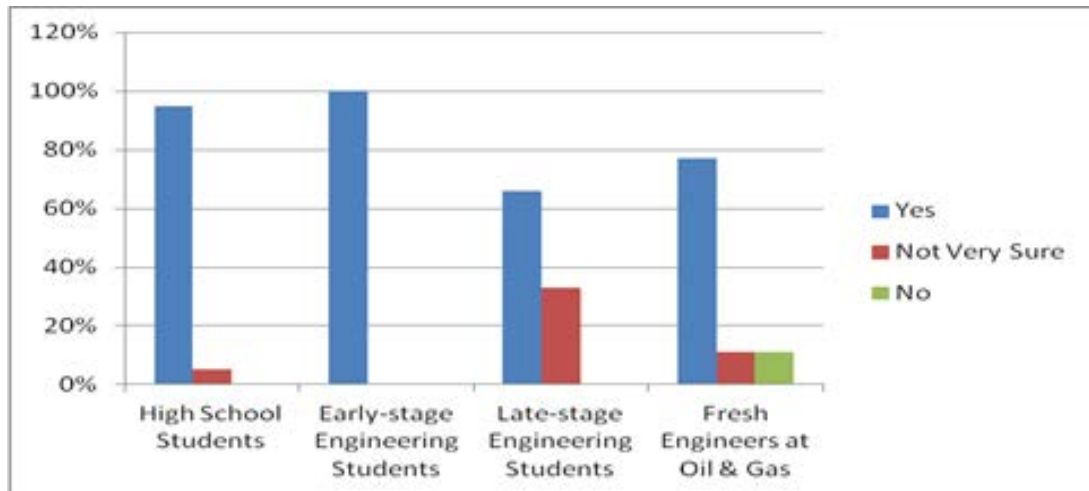
These findings do not support those of Pitcher and Purcell (1998; Table 3.1), who indicated a high level of confidence among engineering graduates regarding their future in the labour market, compared with graduates in other subjects/disciplines. The researcher wondered whether this was due to the nature of these subjects, quality of education, features and orientations of students or availability of more employment opportunities in the labour market: in other words, higher demand for these disciplines.

When we look at the findings of this research in a Qatari context, we can identify significant increasing demand for Qatari engineering graduates; yet the level of aspiration among engineering graduates does not match this. Is this to do with education, students, the labour market, or a combination of all of these?

Among freshly employed engineers within the oil and gas industry with regard to their career path preferences (Figure 6.6), the majority (approximately 45%) had a tendency towards managerial paths; with a much lower percentage (around 23%) moving towards the technical career path, while about 32% of

these fresh engineers were unsure about their trajectory.

Most of these engineers had no intention of considering any further postgraduate or professional studies, which may indicate a tendency to stay away from further in-depth technicalities within their specializations.

The above is concurred by concern of employers as expressed explicitly by one of them

> '*Many of the engineering graduates, especially today's graduates, prefer white collar jobs, however, our plant badly needs technical people*', (EMP 05, 2011).

Figure 6.6: Career Path Preferences of the Fresh Engineers in the Oil and Gas Industry (Source: The Author's Survey)
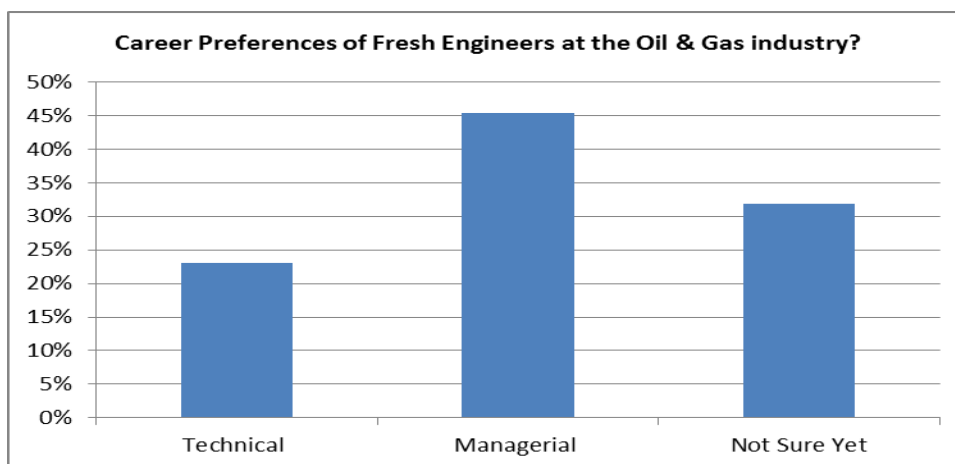
An overall tendency among nationals to work in office-related or managerial (i.e. white-collar) jobs was also identified: leaving a significant portion of the highest-contributing industry in the country, technical as well as field-related, inadequately staffed with local talent and engineers (Bunglawala, 2011).

This constitutes another challenge for management in the oil and gas industry when dealing with engineering graduates' preferences while satisfying business imperatives and requirements. It further re-emphasizes an essential argument of this research: the need for 'employability' to be looked at from the perspective of the employer, the industry and the nation as a whole, and not only from that of the individual graduate or employee.

Benefiting from Skill Formation Efforts and Engagement with Work:

In spite of these generous, professional development and training plans, motivations, incentives and rewards, many employers were not quite satisfied with the end results: the level of contemporary graduate engagement and participation is questionable. Some employers believe this could be due to lack of attachment to the job as well as the organization (EMP 06, 2012):

> '*For many of the fresh graduates, it takes them time to get engaged effectively with their jobs and their new organization, perhaps one of the reasons is that many of them keep an eye outside!!*'

However, this may represent a case of simply passing blame on, without even trying to ask whether employers' coaching, training and development programmes and career guidance allow for establishing and building the desired attachment to the job and the organization which would normally result in more effective engagement and participation by the employee.

Although there are common perceptions among different concerned parties pertaining to the challenges facing engineering graduates, there is no such understanding with regard to the underlying causes and the way these

challenges can be overcome. Perhaps the main reason for such differences is the tendency of the different parties to look at the matter from their own perspective, ignoring perspectives of others. In other words, each party normally tries to pass the responsibility, and sometimes the blame, onto other parties: apparent in the responses of some senior academics:

> '*I would say that, the fresh graduates are very energetic and enthusiastic to the extent that if they do not find a good job that absorb their energy and motivates them, they will keep moving from one job/employer to another. This is basically due to the poor coaching and mentoring systems within some employers, and with such a very competitive labour market, fresh graduates won't waste their time in such boring organizations, but rather keep searching for a better opportunity*' (EDU 01, 2011).

In other words, some of the academics argue that the issue is not with graduates' preparedness to enter the labour market; but with the coaching and mentoring, training and development systems on the employers' side: which in their opinion, fail at times to guide these graduates and get the best out of them.

While other academics do appreciate that the educational institutes' role should go beyond traditional theoretical education and extends to include practical skills such as teamwork, communication, presentation skills and even etiquette.

> '*While we teach our students technical skills such as the significance and consequences of an engineering decision or a technical report writing skill, we do not overlook the socio-work skills, in fact we teach them how to communicate and work with others at the workplace by having them*

acquiring team-working skills, communication and presentation skills and even etiquette skills, in other simple words, we want our graduates to be professionally and socially successful', (EDU 02, 2011).

This reflects a wide disagreement between employers and educators when it comes to perceptions about graduates and whether what is being delivered by the other party is actually the most appropriate approach to deal with current gaps and challenges.

Many of the employers believed there to be several factors affecting graduates' ability to effectively make use of the training and to actively engage with their jobs. (EMP 03, 2012) notes that cultural and economic factors form the main challenges to fresh engineers' transition; in addition to a third factor that has to do with mentoring at the place.

Cultural Aspects:

In this regard, (EMP 03, 2012) suggests that cultural aspects and expectations may be among the most challenging issues in the transition process; however, these are strongly associated with the economic situation, which allows graduates plenty of opportunities to choose from. If labour market offers had been very limited, and competition among graduates greater, this would certainly have changed the equation, and pushed graduates to be more 'reasonable' in their expectations and labour market orientations. This was why this study chose a modified definition for the STWT, including the term 'reasonably': 'The period of time between completing the educational stage by graduation to the first reasonably stable and fulfilling engagement within the la

Prosperous Labour Market Conditions:

In line with Bunglawala (2011)'s suggestions about Qatar and UAE being among the top Gulf states with prospering economies, prosperous market circumstances have added another challenge for employers, the labour market and decision-makers: by facilitating the tendency among many fresh engineers (as well as from many other disciplines) to move from one job to another. These circumstances are coupled with a scarcity of qualified nationals, especially in scientific and technical fields such as engineering: resulting in what (EDU 01, 2011) described as the 'talent war'.

The Non-Qatari Mentor:

(EMP 03, 2012) adds that another challenge is the reluctance of some non-Qatari mentors to do their best and carry out their mentoring duties with passion. Instead, they are afraid of job loss. This drawback was identified by many companies, some of which had made great efforts to overcome this by linking mentoring activity to overall performance appraisal, appreciating 'performing mentors' and providing them with a higher level of job security: yet this still forms a significant challenge to the mentoring process, its outcomes, and the way it reflects on the transitional stage of the engineering graduates in the short run, and the career path in the long run. An HR Manager of a leading employer in the oil and gas sector explains that:

> '*We do believe that we have a difficulty in convincing the non-Qatari mentor to give everything he's able to give, as some of them perceive the Qatari engineers as a threat to their jobs, however, we are trying to set methodologies that would eliminate their concerns and to express*

appreciation for those who deliver mentoring with passion that would normally reflect on the outcomes of the mentoring process' (EMP 02, 2011).

In this regard, organizations have to set methodologies that do encourage people within the organization to voluntarily share their knowledge with others, in order to maintain their real assets. A mentor can provide much more than 'explicit knowledge'; they can also convey 'tacit knowledge', which in most cases has much more value. Abduljawad (2011) drew the distinction between these two types of knowledge illustrating that Explicit Knowledge: forming 20% of overall knowledge and characterized as easier to document and share, easier to replicate, and contributing to efficiency; whereas Tacit Knowledge: forming 80% of overall knowledge and characterized as harder to articulate, harder to steal, harder to transfer, adding higher completive value, and leading to competency.

Therefore, this study argues that mentoring should not be looked at as an activity isolated from the entire learning, development, training and working processes. In this regard, the non-Qatari mentor, manager, supervisor or co-worker should also be engaged with these processes in some way, not only by assuring their job security or by allowing for 'monetary incentives' to encourage the delivery of mentoring with passion. Their commitment should be built in within the processes and encouraged by the people they engage with, by promoting the intrinsic values of educating others, teaching and guiding them, in line with the non-financial drivers that Ashton and Green (1996, p.3) suggested should remain central to the objectives of any desirable skill formation system.

Concluding Remark:

In a Qatari context, there is a significant increasing demand for Qatari engineering graduates, yet the level of aspiration among the engineering graduates is not matching this level of labour market demand. Furthermore, there appear to be less flexibility displayed by engineering graduates orientations and trajectories towards the labour market which seems quite flexible in offering various options for Qatari engineering graduates, which could be linked mainly to the cultural aspects and prosperous economic circumstances.

This in fact does support the previous argument of Osipow and Fitzgerald (1996) that a particular weakness of Super's theory is its failure to integrate economic and social factors that influence career decisions, as seems to be the case in a Qatari context. Meanwhile, this suggests that seeking to explain the gains of education and training as a form of investment in human resources, with the main proposition is that people are considered a form of capital for development' (Aliaga 2001; Becker, 1993; Benhabib and Spiegel, 1994; Engelbrecht, 2003; Hendricks, 2002, cited in Nafukho et al., 2004, p. 546), without paying adequate attention to the human aspect in this equation might still result in the 'black box' of Ashton and Green (1996).

Accordingly, it is argued in this study that any investment in human capital which aims to help form skills should not omit developing the "motivation from within" individuals, as from a human factor perspective, the motivation element can still make a significant difference in the output of any skill formation process, in line with the suggestions of Lee (2007) that Vroom's Expectancy

theory do reveal implications for the explanation of the motivational factors of individuals to various situations or settings, including the performance at work.

Therefore, applying this argument to the mentoring process, it is believed that unless the people involved in the mentoring or coaching process (i.e. the mentor and the one being mentored) have intrinsic drivers that would enable both to optimize the give and take of the process, mentoring would still take a more ceremonial form, which might not really achieve the intended purpose or the desired outcomes. Moreover, it is argued that only the internal drivers from within a person can guarantee that tacit knowledge is really transferred or shared with others. If these drivers are linked to intrinsic values, an individual tends to give without waiting to be compensated or rewarded: as the real reward would be the feeling that is generated, in a manner that would benefit individuals, organizations, and the nation.

6.1.4 The Nature of Relations between Education and the Labour Market

According to (WB, 2005), prior to being reformed in 2003, education was not performing in isolation from the labour market; however, educational institutions maintained only loose linkages with it, operating with quite a traditional, non-dynamic approach that did not allow for the labour market's continually changing needs and requirements.

Since education reform began, linkages and relations between education and the labour market have also started to change; however, seems the maturity and consistency of these activities are still a concern from many interviewees' point of view.

For many organizations within the labour market, collaboration mainly appears in the form of scholarships, internships, training, recruitment and consultation. Most of the key players' companies have links with local universities, particularly in business, finance and engineering; however, consistency and intensity levels of these relations vary, and there is a tendency for interaction to be on a ceremonial level in some cases.

In this regard, the Learning and Development Manager of a leading employer within the oil and gas sector clarifies that:

> 'We have channels with all the local universities, however, the relation with some of these universities is more consistent and mature compared to the relation with other universities, where it tends to take a ceremonial form. The cooperation aspects are mainly: scholarships, training, recruitment and consultation' (EMP 01, 2011).

The outcomes from interviewing senior officials and academics from the engineering education providers indicate varying views with regard to the challenges associated with engineering graduates' transition into the labour market; however, there was a general tendency to link the concerns to the other side of the equation, i.e. the educators to assume that the education sector is doing/almost doing all that is required from their end, while the other party is yet to fulfil their responsibilities. This was apparent in the comments of some senior academics on career guidance in the labour market:

> 'I would say that, the fresh graduates are very energetic and enthusiastic to the extent if they did not find a "good job" that absorbs their energy and motivates them, they will keep moving from one job/employer to

another. This is basically due to the poor coaching and mentoring systems within some employers' (EDU 01, 2011).

Furthermore, it might be disappointing to learn that, in some cases, actual output of these relations tends to appear in the form of branding and image-building, rather than real skill formation and human capacity building. In fact, this explains a comment made by a senior official on how some organizations understood their participation/involvement in the annual Qatar Career Fair:

> '*We were telling them, please do not send your Marketing Managers, we need your Human Resources Managers for this event, as some of these organizations interpreted the fair at the early stage to be an opportunity for image building and business promotion*' (OCP 07, 2011).

Collaboration versus Conflict of Priorities:

Throughout the course of the research, it was observed that on every occasion and in every public discussion, everyone seemed to confirm the need for effective collaboration between education and the labour market; and emphasized the great benefits that would be achieved at national level, sectorial level, social level, and eventually individual level as a result. Yet some faculties and colleges measured their performance in terms of the number of students admitted and students graduated; rather than number of successful entries to the labour market, or effective engagement of these graduates within this labour market.

Conversely, some employers measured their performance in terms of the

number of fresh national graduates coming on board or the nationalization percentage achieved, regardless of whether that formed a stable working platform for the graduates; or whether the additional numbers of Qatari nationals in employment meant effective engagement with the working environment and a real addition to the core business of these organizations.

For instance, there was agreement among the interviewees that internships constitute a significant example of the cooperation between the educational sector and the industry; however, there was disagreement over its effectiveness, as noted by one of the senior academics:

> '*Internship can be a valuable opportunity for graduates to gain practical knowledge and get equipped with some of the essential skills that they would be requiring while entering the labour market. It is also a great opportunity for employers for screening, headhunting and recruitment purposes, however, it should be understood that this is not always the case, as some employers are utilizing the internship for business promotion and image-building purposes only, and hence graduates do not really get the intended benefits of such an internship*' (EDU 04, 2011).

This, perhaps, not only applies to internships, but also to other forms of cooperation that exist between the educational sector and the industry. As (EMPL 01, 2011) noted earlier, the education-industry relationship '*tends to take a ceremonial form'* in some cases: thus we can identify an issue of doing things for purposes which are not those originally intended, or of having the 'desired links' being established for the sake of 'being there', rather than adding value. This was also seen to apply when we discussed the concept of

'Qatarization' in section 2.2, i.e. how some employers tend to deal with it from a perspective of 'numbers' rather than quality. In such cases, this approach neither delivers benefit for any of the concerned parties, nor tallies with the essence of the relevant national vision and strategies.

This emphasizes the importance not only of recognizing top national priorities (i.e. through the introduction of QNV 2030), but also of the pressing need for all concerned parties to have the same order of priorities built-in within their individual organizational visions; and a broader appreciation that individual organizational performance is one 'brick' that needs to be integrated with other organizations' 'bricks' in order to build the entire structure of the national vision.

Furthermore, this, in turn, raises the importance of measuring performance. As the effective measurement of collaboration outputs plays a crucial role in sustaining collaboration and enhancing its effectiveness. In many cases, measurement is either overlooked or ineffectively performed. Although measurement is not a goal by itself, but unless there are effective tools in place, it would be difficult, and perhaps impossible, to determine how far someone is actually achieving the intended goals (Martin et al., 2010, p. 58).

High Schools: Where Do They Stand Within Education-Industry Collaboration?

When verifying high schools' position within existing education-industry relations, it is found that they are almost excluded, despite that there are some initiatives to establish links between high schools, higher education institutions

and industry; however, these seem to be limited, inconsistent and immature.

The nature of this relationship is reflected in responses received from the different parties: for instance, the HR Manager at one of the oil and gas companies was:

> *'Yes, we are trying to have cooperation relations with high schools as we believe this can help in creating better awareness among students and teachers about the Oil and Gas industry requirements, this includes arranging seminars at the high schools and arranging visits to our plants and offices to explain about our operations, but to be frank, it is not yet a consistent relation'* (EMP 06, 11).

Meanwhile, the situation does not really differ when it comes to relation with the higher education institutions, as relations tend to be limited to 'occasional' visits or seminars, without an established systematic approach or clear mechanism in place: which ultimately affects the career education process, as will be discussed further in section 6.2.

Concluding Remark:

Different forms of collaborations between education and industry appeared particularly after the Qatar University (QU) Reform Project in 2003, mainly in the form of scholarships, training, recruitment and consultation, however, the existing collaboration links are varying in terms of intensity and consistency. In some cases the relationship tends to take a ceremonial approach and is mixed up with organizational image building, which goes in line with the discussions made in section 3.5 that in most of the non-knowledge-based economies, the

role of higher education institutions has tended to be limited to teaching.

Meanwhile, these links do not seem to present the role of 'serving the community' being a key role for universities in many knowledge-based economies as suggested by Decter (2009).

Moreover, it is found that there is a lack of effective education-industry links when it comes to high schools, which even tends to disappear altogether at the earlier schooling stages (i.e. preliminary and elementary education), whereas it was argued in sections 3.4 and 4.3 that it is more important to have skill formation begin at these early schooling stages (Nazli, 2007, p. 446), as would ultimately help graduates to manage their career, as concluded by Anakwe et al. (2000). It should continue throughout the individual's career life, including professional career development as suggested by Pringle and Gold (1989), and being one key argument of this research, that the education-industry should not be limited to the university-industry collaboration, but needs to extend that collaboration to include the other educational stages.

Accordingly, there is a need for the education-industry collaboration to aim for successful models, perhaps similar to the ones cited by Neumann and Banghart (2001), Martin et al. (2010) and El Karkouri (2011) in section 3.5.

Meanwhile, and despite examining the expectancy theory of Vroom (1964) in Chapter 4 was mainly intended to help achieving a better understanding of the role of 'motives' in the outcome of educational and training processes, it is argued in this study that the utilization of this theory can even be extended to

address the motivation aspect among organizations such as educational and labour market firms from an organizational perspective, rather than an individual's perspective only, and that is to say that establishing 'motives from within' based on intrinsic values may not only apply to individuals, but also to organizations.

This argument shall be discussed further in section 6.2.4.

6.1.5: Thinking Otherwise: The Interacting Roles of Different Stakeholders towards STWT in View of the Employability as a 'Stair'

Based on the discussion of findings associated with engineering education output (section 6.1.1), the transitioning into oil and gas industry (section 6.1.2), the engineering graduates' orientations and trajectories towards the labour market (section 6.1.3) and the nature of relations between education and the labour market (section 6.1.4), there seem to be a need for thinking of the efforts and initiatives associated with graduates' skill formation and employability in a different manner.

As discussed in section 4.2, Super's approach does not propose that it is the individual's sole responsibility to identify and develop the own skills at different age levels; but rather, that these need to be built and developed, through integrated and combined efforts from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012).

Meanwhile, Kivinen (1997) suggested that quality education is a more essential prerequisite for today's graduates than ever. – but as noted in Chapter 3, without graduates' ability and flexibility to adapt to the market, and without the

labour market's ability and flexibility to benefit from the increased number of graduates (though this is not the case for the Qatari engineering graduates), the 'dilemma' of graduates' employability will continue to grow.

Such is this shortage of graduates, which reaches a level of scarcity in the case of engineering graduates in Qatar; 'employability' remains an issue of concern for the different parties, particularly for employers.

As explained in Chapter 3, 'employability' should not be interpreted simply as 'securing a job': this would be quite misleading and would not reflect the real ability of graduates to become actively engaged with the labour market, or that of educational institutions to meet the labour market's expectations; and/or the ability of the employers to effectively capitalize on this human capital. This is particularly true when the labour market circumstances allow for more job openings, meaning that unemployment falls: as is the case in Qatar.

At this point, it should be acknowledged that, regrettably, some senior academics do not seem to be aware of or work in line with the essence of the QNV 2030. When remarking on the 'employability' of their graduates, a senior academic commented:

> '*Our graduates do not have any issue with their employability, in fact they are very employable and any of them is able to get two or three employment offers at a time, immediately after graduation, and sometimes even prior to formal graduation*' (EDU 03, 2011).

The above understanding of 'employability' reflects a significant drawback in defining educational institutions' responsibility from one side and the labour market's requirements from the other. In fact, it implies a narrow and limited

understanding of employability, which will only negatively affect educational institutions' ability to satisfy labour market needs effectively.

As noted in Chapters 3, some tended to define employability as simply the opposite of 'unemployment', and over-simplify things by looking to statistics and percentages of graduates' ability to 'secure a job' within six months of graduation. Not only is this an over-simplification, but it actually appears to be misleading. As Pool and Sewell (2007) explain, using 'securing a job' through 'first destination surveys' as a measure of employability provides a very vague indication and does not tell us much about the ability of these graduates to utilize knowledge or effectively engage with the labour market.

This form of 'employability' measurement is based on perceiving or defining 'employability' as simply another expression of 'employment'; and hence, applying the same measurement tool, which in the best scenario is misleading: as it measures the ability to 'secure income' for an individual, but does not measure any of the following elements:

- The ability of that individual to secure the appropriate utilization of gained knowledge and competencies
- Effective engagement with their work
- Growth and sustainability of the individual, organization, society or the nation as a whole.

In Chapter 3 it was noted that different researchers (Yorke and Knight 2006; Pool and Sewell, 2007; Dafou, 2009) argued for a view of employability as something that not only has to do with the labour market itself, but a great deal

to do with the graduate's own identity, biography, experience, propensity and disposition.

This may also raise the question: 'How are these qualities and competencies acquired in the first place?' A straightforward answer may not be possible; but might be reasonable to think in terms of a 'stair of employability', rather than the 'single-level' concept that most other authors try to present. The 'stair of employability' concept, set out in the following discussion, implies that employability has different levels, achieved at different stages of an individual's career life.

The Stair of Employability:

The researcher aims here to differentiate between what is suggested to represent 'preliminary employability', and what may represent 'continual employability'. The concept of a 'Stair of Employability' could be useful in differentiating between the varying levels of responsibility among key stakeholders (educational institutions, employers, graduates and the state) at two distinct stages of career life.

In this classification, 'preliminary employability' is associated with the transitional stage, represented by the pre-STWT and STWT stages; whereas 'continual employability' is associated with post-STWT stages. To elaborate further, preliminary employability would be essentially required for fresh graduates at their STWT stage to move into the labour market and be engaged with the work. It is the first step on the 'stair of employability'.

At this level of employability, educational institutions and employers must have higher shares of responsibility towards students, graduates and fresh

employees. At this stage, graduates need higher levels of guidance and support: which is significantly linked with the role of education-industry partnership in facilitating the STWT, without negating graduates' own responsibility as noted earlier in section 4.2.1 (Brown et al., 2011; Tomlinson, 2007; Kivinen, 1997; Pool and Sewell, 2007; Andrews and Higson, 2008; Rehfuss et al., 2012)

Based on this concept, the 'preliminary employability' 'step' forms the 'threshold' to the employability stair; and the 'continual employability' evolves out of the preliminary stage as graduates are completing their STWT; and develops as a lifelong process to sustain the competitiveness of an employee.

The 'Stair of Employability' concept aims to help linking the roles of key stakeholders with the associated stages of STWT towards a better appreciation of the interacting roles of these stakeholders in facilitating the transition process.

In sum, and as noted earlier in section 4.3.1, it is necessary for graduates to have acquired the essential skills and competencies (representing the preliminary employability requirements), for their entrance to the labour market – but these should never be assumed to be fixed or final, and instead keep evolving in relation to changes and developments within the labour market and the business community's needs (representing the continual employability requirements).

Accordingly, this requires educational institutions to maintain their curriculums as 'live' and keep up to date with changing labour market needs. It also requires individuals to maintain their skills and competencies at the level of labour

market expectations: which can help graduates manage their career (Anakwe et al., 2000), which suggests an interactive connection among educational institutions, graduates and employers towards a continual skill formation process.

Figure 6.7 illustrates how the 'preliminary employability' 'step' forms the 'threshold' to the employability stair. It is a wide step that starts forming over childhood, through school; and begins maturing during final schooling stages and as the individual enters the labour market.

'Continual employability', on the other hand, evolves out of the preliminary stage as graduates are completing their STWT; and develops as a lifelong process to sustain the competitiveness of an employee. With this level of employability, which in itself has several continual sub-levels, graduates are likely to be considered as employees and take more responsibility for achieving their own employability when compared with the preliminary employability level.

Figure 6.7 implies that continual employability continues to develop over time as a lifelong process, and does not stop at a certain stage of a career life.

The model presented in Figure 6.7 – this thesis' first original contribution to knowledge – represents a different way of thinking of employability in light of Super's career development theory and the views associated with skill formation as noted earlier in section 4.2 (Brown et al., 2011; Tomlinson, 2007; Kivinen, 1997; Nazli, 2007; Pool and Sewell, 2007; Andrews and Higson, 2008; Rehfuss et al., 2012; Rassi, 2011; Harris-Bowlsbey, 2012), and further argues that the Super's stages of career development do not just occur in such unintentional manner, rather it has to be driven through interactive and

accumulative efforts by all concerned stakeholders.

Figure 6.7: The Stair of Employability (Source: The Author)
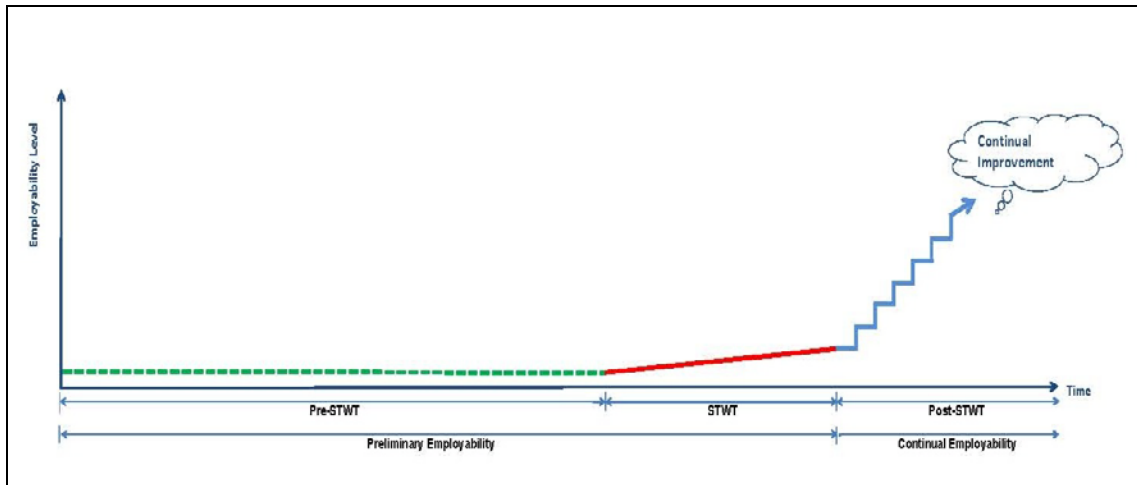
Looking at the STWT in the light of this concept, it is not isolated from any of the stages that may come before or after, and cannot be thought of as a stand-alone stage to be understood without properly understanding what comes before, in between and after.

Indeed, this illustrates that STWT has much to do with the preparedness acquired during the different educational stages as well as the arrangements/set-up made on the employer's side that can act either as a great help or a great obstacle during the transitional stage of an individual. Of course, this should not negate the sense of responsibility of the graduates themselves towards their own development as continuously emphasized in this thesis.

Ultimately, this implies an imperative role for the education-industry partnership at the different stages of developing these employability levels and helping graduates to possess a sense of responsibility towards their continual development. Thus the 'stair of employability' model is very useful in helping to differentiate between the varying levels of responsibility among the key

210

stakeholders at the different stages associated with the STWT.

To further expand on this concept, Figure 6.8 provides an illustration of the roles and level of responsibility of the three key stakeholders, educators, employers and graduates, at the pre-STWT, STWT and post-STWT stages in light of the 'stair of employability' concept. It implies that educators have a major role in career education, skill formation and employability enhancement, which gradually evolves over time to reach its peak at the pre-STWT stage and declines to a steady level, indicating the need for continuous cooperation with industry and graduates as part of a lifelong learning process.

Figure 6.8 illustrates that educational institutions should have the 'thickest' contribution towards building and enhancing individuals' employability at the pre-STWT stage, and start to make contributions with less thickness during the STWT and post-STWT stages.

Educators have a role for, equipping their students with the 'right set' of knowledge and skills appropriate for achieving a match with labour market requirements, and preparing their graduates to successfully enter the market (particularly addressing the pre-STWT stage).

They are expected to have measures and methodologies in place to attain and sustain the preparedness of their graduates. In the first place, this entails an identification of labour market needs and employers' requirements in order to update/customize educational systems and programmes to tally with these and eliminate, or at least minimize, the gap between the education process' supply and the labour market's demands.

The situation seems to be different for the employers, as they are assumed to have the thickest contribution during the STWT stage, with significant contributions at pre-STWT and post-STWT stages. In fact, the overlaps between educators and employers at the different stages, and particularly at the pre-STWT stage, highlight the importance of the education-industry collaboration/partnership in making the STWT smooth and effective, and more important, in helping graduates obtain the necessary skills and competencies to continually improve and develop their careers.

Recent research continues to provide evidence that workplace learning is a powerful tool in facilitating STWT, developing employee skills and increasing productivity (Walsh, 2007). However, it is argued that the role of employers is not limited to the provision of training and development in the workplace. Instead, it should start much earlier by establishing an effective partnership with educators.

Figure 6.8 implies that employers have an evolving role in career education, skill formation and employability enhancement over the different educational stages; however, their role reaches its peak and becomes crucial at the STWT stage and declines gradually to a steady level, indicating the requirement to continue efforts towards employees' career progression and life-long learning process, in cooperation with educators.

While discussing the concept of education-industry partnership earlier, it is noted that the influence of government policy on university-industry links (Decter, 2009). In most cases, the government's role tends be found via legislation and regulations that govern the relationship between educators and

employers, or the components within the labour market. However, the government may also have a significant role in facilitating relations between various stakeholders through support, encouragement and involvement, in line with the suggestions of Cummings and Jecks (2004) pertaining to the necessity of social dialogue, although this study extends the concept of Social Dialogue to include the educators in a form of national partnership.

Figure 6.8 further illustrates that graduates/employees have a responsibility, which continually evolves, towards their own self-development as well as their engagement and effectiveness within the labour market: suggesting that while the responsibility of educators and employers tends to decrease towards the stage of continual employability (i.e. towards the successful completion of the STWT stage); individuals' responsibility tends to increase.

Based on Tomlinson (2007) and Pitcher and Purcell (1996), it is concluded that students/graduates do have to exert their utmost to equip themselves with skills and competencies valued by employers, which serve the particular business requirements. Furthermore, graduates are expected to express a high level of self-responsibility for their own development and progression, while maintaining a reasonable level of flexibility towards the labour market and the ability to adapt to continually changing circumstances.

Figure 6.8: The Interacting Responsibilities of Education, Employers and Individual towards Employability (Source: The Author)
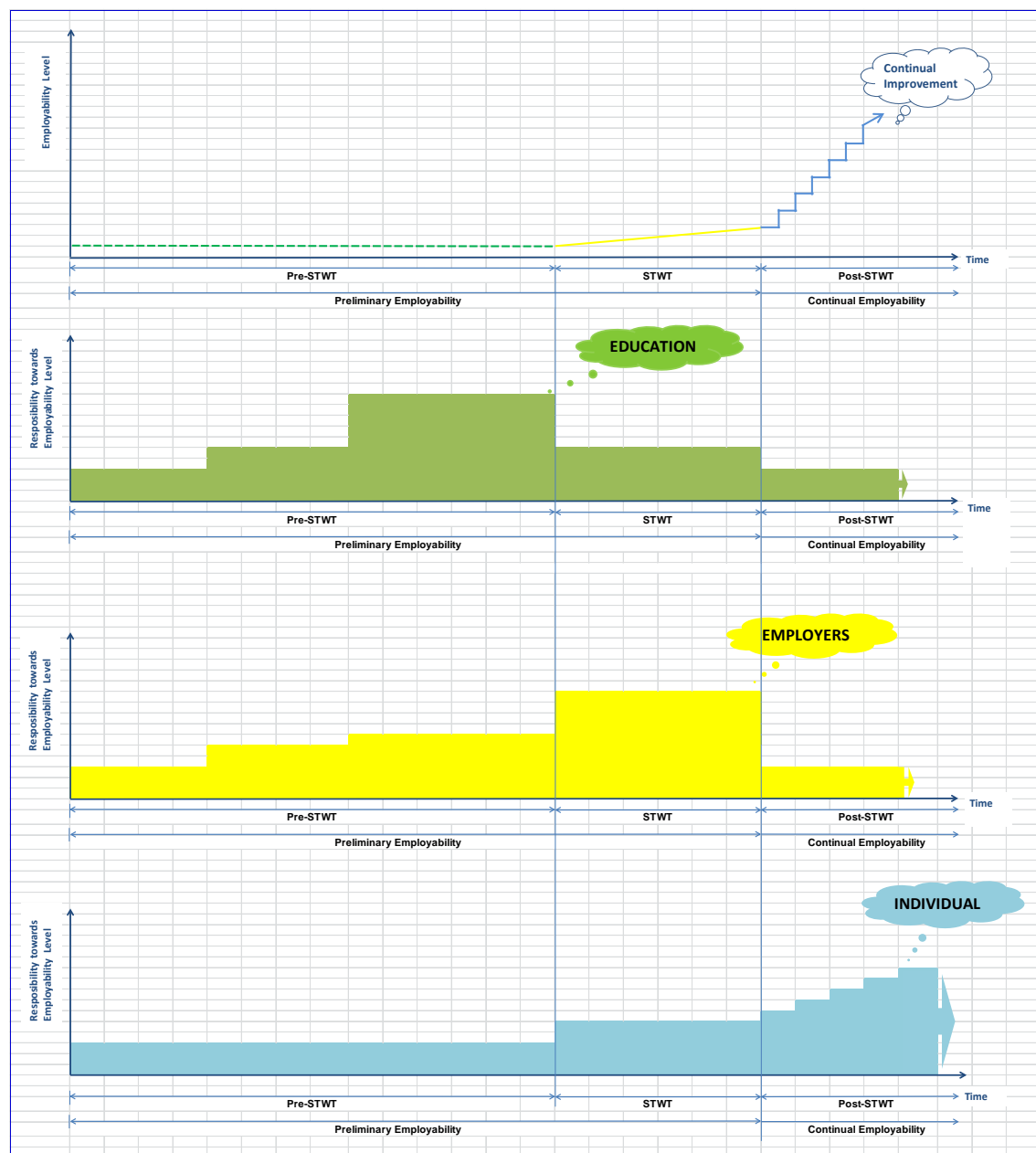
A Refined Definition of Employability:

The concern set out in Section 6.1.1 pertaining to weak links between universities and their graduates after graduation suggests that the interpretation of the role of colleges and universities with regard to employability should not

be limited to the 4-5 years studying period, rather it should extend over the career life-cycle of a student in interactive manner within a social dialogue as suggested by Cummings and Jecks (2004).

Furthermore, the concerns set out in Section 6.1.3 pertaining to Qatari engineering graduates' trajectories and orientations towards the labour market suggest further differences from the 'key to employability' (Pool and Sewell, 2007) and other definitions of employability: which seem to overlook the interests of other stakeholders. In other words, even when a country has sufficient labour market preparedness to maintain adequate access for today's graduates and opens its doors to those with basic qualifications, there are no guarantees that 'employability' is satisfactorily achieved from the perspective of the labour market in particular, and the nation in general.

This helps us towards a refined definition of employability: which can apply under varying circumstances, both when the labour market does not allow for an adequate number of graduate opportunities, and when it offers plenty of opportunities, yet graduates are unable to fulfil its needs: leading to an unbalanced employability equation.

The findings pertaining to Qatari engineers' orientations and trajectories towards the labour market might even suggest a potential person-environment (PE) mismatch: which may have to do not only with individuals' characteristics, but more with career guidance received in the first place, in line with the key assumptions of Super's theory (Harris-Bowlsbey, 2012).

Chapter 3 set out the problem of false concepts of employability (or indeed,

inadequate definitions of employability), and how different researchers (Andrews and Higson, 2008; Hillage and Pollard, 1998, cited in Pool and Sewell, 2007; Yorke and Knight, 2006) have defined employability in different ways depending on their perspective. In Chapter 3, the STWT was defined as **'The period of time between completing the educational stage by graduation to the first reasonably stable and fulfilling engagement within the labour market'**. This definition is based on three key elements; plus a further element that gauges the other three.

In line with this understanding of the STWT, and considering the matter from different stakeholders' perspectives, this study suggests that employability can in fact be defined as **'the ability of an individual to effectively utilize the right set of continually improving knowledge and skills in a labour market that offers the opportunity for such utilization'**.

Despite the apparent simplicity of this definition, it clearly defines the roles of key stakeholders within the 'stair of employability' and establishes a reasonable link between these roles and the STWT.

Concluding Remark:

Super's approach proposes that it is the individuals' responsibility to identify and develop their own skills at different age levels, and these need to be built and developed, through integrated and combined efforts from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012) with the aim to establish, develop and enhance individuals' employability, however, there seem to be a need for

thinking of the efforts and initiatives associated with graduates' skill formation and employability in a different manner.

The researcher here introduces the concept of 'Stair of Employability' to differentiate between what is suggested to represent 'preliminary employability', and what may represent 'continual employability'. This concept could be useful in differentiating between the varying levels of responsibility among key stakeholders at two distinct stages of career life.

Andrews and Higson, 2008; Hillage and Pollard, 1998, cited in Pool and Sewell, 2007; Yorke and Knight, 2006) have defined employability in different ways depending on their perspective, this study suggests that employability can be defined as **'the ability of an individual to effectively utilize the right set of continually improving knowledge and skills in a labour market that offers the opportunity for such utilization'.**

The above definition represents the concept of the 'stair of employability' in light of the previously discussed STWT stages; and interprets employability as a joint responsibility of educators, policymakers, employers and graduates. Accordingly, failure or deficiency of any of these parties in fulfilling their role may cause the 'employability vehicle' to either stop or malfunction, and the 'stair of employability' to collapse.

In a Qatari context, perhaps it is even legitimate to argue that the employability definition adopted by this study tallies with the essence of QNV 2030, which strives for quality and the effective engagement of human capital within social and economic development.

6.2 TOWARDS ENHANCING NATIONAL CAPACITY BUILDING AND ENGAGEMENT LEVELS

Chapter 4 noted the need for wider perspectives over a national human capacity able to transfer the economy into a knowledge-based economy and the nation into a developed one, without continuing to depend on an expatriate labour force.

In a Qatari context, it is concluded in section 6.1.4 that the relationship between education and industry tends to be weak, and in some cases, takes a ceremonial approach and is mixed up with organizational image building, Meanwhile, these links do not seem to present the role of 'serving the community' being a key role for universities in many knowledge-based economies as suggested by Decter (2009).

In the following analysis shed the light on the key features of career education in Qatar being one essential form of education-industry collaboration, the responsibility of key stakeholders towards national development strategies and the need for working through national frameworks as well as the need for thinking in a different manner with regard to career education.

6.2.1 Features and Attributes of Career Education in Qatar

Thus far, we can identify a considerable difference of opinion among the concerned parties with regard to the adequacy of career education. Some have questioned the effectiveness of training and development programmes or coaching and career progression systems on the employers' side. Others have questioned the ability of the educational institutions to equip their students with

the necessary/essential practical skills while they head towards the labour market. At others, there have been questions about the fitness or suitability of the major selection and whether this has matched the individual's own skills, interests and capabilities.

This section sheds the light on career education over the different stages, based on analysis of the responses obtained from the research participants, keeping in mind that when discussing career education at schools, universities or workplace should not imply that the responsibility for career education relates to the particular place/stage under discussion only - but instead, constitutes a distinct stage of the STWT, in which that particular place/stage have the most significant role: without negating the roles and responsibilities of other stakeholders, as illustrated earlier by the 'Stair of Employability' concept.

Career Education at Secondary School (pre-college):

Starting with the career advisory and academic guidance at the secondary education stage, it was found that some initiatives do currently exist within the secondary education system, particularly in 'Independent Schools', to guide and provide academic advice to secondary school students in choosing between different streams of study such as business, engineering, or medicine. Each of these streams is more focused on a number of subjects related to the particular relevant fields and the curricula are aimed at preparing the students for that potential area of study upon exit from secondary school; the student needs to select a stream that tallies with their own interests, skills and capabilities, implying that the selection basis tally with the previous suggestions of (Feldman and Whitcomb, 2005; El Rassi, 2011; Rehfuss et al., 2012) as discussed earlier

while examining Holland's career choice theory in section 4.2.2 and 4.2.3.

However, the analysis of the responses obtained suggest that the selection process is not supported by a scientific or systematic approach, and in many cases depends on quick basic academic advice or advice from parents, a classmate or friend.

The following is a quote from the interview with an academic advisor at one of the high schools covered during the survey:

> '*We normally try to conduct awareness sessions to our students to illustrate the potential options and different choices for them to choose among once they register in the university, and sometimes we invite representatives from universities or major employers in the labour market, or take our students on visits, we also ensure visiting the annual Qatar Career Fair to have our students get to know the available options within the education and the labour market*' (HSA 03, 2012).

Moreover, it was also found that some academic advisors do not possess the necessary professional qualifications to perform their duties effectively, but rather depend on teaching experience and self-learning, as clarified by one of the interviewees from a governmental authority:

> '*The academic guidance at the secondary schools is yet to be mature in a manner that can really serve the purpose of guiding the students in choosing the fields or streams that best fit their capabilities, interests and requirements*' (OCP 02, 2011).

Career guidance at secondary school is both critical and decisive: many post-secondary education choices/decisions will be based on decisions made at this

stage; and in turn, lifelong career decisions are likely to be formed thereafter along the same path, as suggested by (Anakwe et al., 2000; Nazli, 2007; Harris-Bowlsbey, 2012) in section 4.3.1.

The majority of high school and early-stage engineering students had received some sort of academic advice: but when looking at their opinions on the usefulness of this advice, a question mark became apparent over its effectiveness. This matter of career guidance becomes even more questionable when analysing high school students' decisions associated with major selection.

On those factors underlying students' decisions in selecting engineering studies (Figure 6.9), the 'subjective' factor was predominant in students making the decision, as approximately 87% of respondents said they 'liked' engineering. Second, parental encouragement: approximately 50% of respondents were encouraged by their parents to go for engineering; while the third affecting factor was 'reputation' of the engineering profession as a promising discipline.

This result invites more questions upon the 'academic guidance' or 'career advisory' role.

Figure 6.9: Factors Influencing Students' Decisions in Selecting Engineering Studies (Source: The Author's Survey)
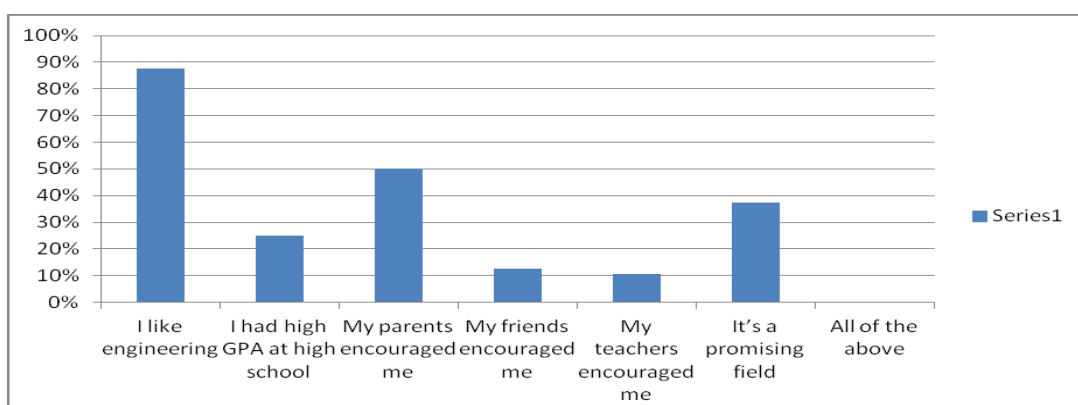
The above results on the factors influencing the selection of engineering studies among early-stage engineering students can be usefully compared with those factors influencing the selection of the engineering stream among high school students; though it needs to bear in mind that this stream does not necessarily lead to engineering studies upon completion of high school. It does, though, give an initial indication that high school students are willing or interested to choose studies similar or close to engineering disciplines.

A significant issue revealed through the survey (Table 6.2), was that the decision of the majority of high school students to select the engineering stream was related to their high GPA as well as encouragement of parents (which carried almost the same influence weight): with much less weight for interest in engineering, which differs from the order of significance in the selection of majors by post-high school students.

Similar views were noted during the focus group discussion, in this regard, the following views were expressed at the discussion:

> *"Parents are not engaged with schools and are only contacted when there are problems",* (FG, 2015).

> *"There are few career advisors in schools – it can be one advisor for 700 students – and even then they are assigned extra roles and responsibilities. It is understandable there is a lack of career awareness among students and their parents",* (FG, 2015).

These results might represent a potential answer (perhaps only partially) to the concern over increasing numbers of engineers switching from profession to

non-engineering positions as will be discussed later in this section; as there do appear to be questions associated with the appropriateness of the selection decisions made by students in the first place, in light of the previous suggestions of (Harris-Bowlsbey, 2012; El Rassi, 2011) emphasizing that the lack of appropriate relevant career decision-making skills would have a later impact on career maturity, and hence, a potential person-environment (P-E) mismatch as suggested by Rehfuss et al. (2012).

The concern was explicitly expressed in interviews with senior officials in governmental and semi-governmental organizations concerned with labour market strategies:

> '*We are seeing these days many engineers and physicians who are switching to other disciplines that do not really relate to their major of study*' (OCP 04, 2011).

The above view seem to express a concern, not to suggest an explanation for the potential reasons of why some engineers are switching to non-engineering disciplines, or prefer the managerial career path. At this stage and within this research, no firm or in-depth conclusions can be drawn about the real reasons underlying this phenomenon.

This matter warrants further detailed investigation to understand the root causes, and discuss/propose the potential corrective measures. The matter needs not be looked at from an individual's perspective only, but instead from the larger national perspective; from the perspective of the amount of effort, time and investment made by the individual and the nation to end with results that are different than the desired ones, as this may represent an example of squandering, or at least inappropriately developing, the nation's scarce human

resources, and perhaps represent an example of Ashton and Green (1996) 'Black Box' in a Qatari context and confirms the inability of human capital theory to provide an adequate answer for such phenomenon without consulting the earlier arguments made in section 4.2 and 4.3 with regard to Super's, Holland's and Expectancy theories.

Table 6.2: Factors Influencing the High School Students' Decisions in Selecting the Engineering Stream (Source: The Author's Survey)

Why have you chosen the engineering stream?	
Answer Options	Response Percentage
I like engineering	57%
I had high GPA	85%
My parents encouraged me	83%
My friends encouraged me	12%
My teachers encouraged me	15%
It allows for more post-high school study options	48%
All of the above	0.0%
None of the above	
Other (please specify)	

Career Education at College (Post-Secondary School):

Though high school stream selection form a crucial portion of the 'accumulated career decisions', a new stage appears for the potential college student, of no less significance. At the college or university education stage, the student needs to become more focused towards a specific major which would be more relevant to his or her eventual working life and the labour market. Unfortunately, it seems that links between secondary schools and universities are yet to be mature enough to bridge the gap for the students as they attempt to select their field of study: many existing initiatives tend to be individual rather than organizational, and occasional rather than consistent and systematic, as illustrated earlier in section 6.1.4.

When analysing the views of the final-stage engineering students as well as the fresh engineers within the oil and gas industry about the career guidance provided at university, the results are more encouraging. These students and engineers tended to have varying views about university career guidance: while 33.3% of final stage students believed it to be very useful, the same percentage regarded it as moderately or slightly useful, with no respondents suggesting it was not useful at all.

However, results from fresh engineers are less encouraging: only 16.7% believed that university career guidance was moderately or slightly useful; 33.3% that it was not at all useful, which may suggest that there is no such agreement pertaining to the effectiveness of existing career education efforts at universities.

Career Education at the workplace (post-college):

According to Super's theory, career education is a continuous process that aims to extend guidance and support for the individual to make the right decisions about their education, work and overall life combination which would best their interests, skills and capabilities (Harris-Bowlsbey, 2012). Career education has huge importance in the workplace: the stage where individuals are expected to deliver the results of earlier educational stages and capitalize on the investment made (whether by the individual or the society/nation) in knowledge and skills formation.

Based on the responses received from participants, there seemed to be disagreement among the interviewees with regard to the effectiveness of career education in the workplace within the oil and gas industry: most employers

believed that current career guidance, progression systems and practices were adequate and effective, but this was not generally accepted by educators, fresh engineers and others.

This is not to negate that some employers did have some concerns with regard to career guidance at the workplace. EMP 04, 2011 indicates that some managers on the employers' side failed to provide appropriate career guidance even from the first point of interviewing a fresh graduate, leaving a greater question mark over career guidance adequacy and effectiveness provided thereafter.

> '*For instance, 'are you willing to work in remote areas?' might not be the most appropriate question to be asked during an interview with a female fresh graduate engineer, as most probably the answer would be 'NO'!!',* (EMP 04, 2011,).

The above indicates that criticism over 'career education adequacy' does even come from within employers' organizations; not only from educators, graduates or employees.

At this point, it was useful to evaluate fresh engineers' perceptions with regard to career guidance in the workplace. These demonstrated a clear upwards movement in comparison with university career guidance: 33% of fresh engineers believed that workplace career guidance was extremely effective; 11% that it was very effective; 45%, moderately effective; 11%, slightly effective. No responses suggested that it was not at all effective.

This might suggest that workplace career guidance is more relevant and perhaps more focused than its counterpart in educational institutions; but again,

a detailed study of workplace career guidance would help clearly identify positives and negatives and provide recommendations for policymakers.

Career Education: An Essential form of Education-Industry Collaboration:

Thus far, a number of existing forms of collaboration between higher education institutions and the industry were noted; but regrettably, these do not seem to form a real partnership or harmony.

Part of school-industry collaboration often takes the form of major employers visiting high schools in order to conduct introductory sessions, aimed at creating awareness among high school students of labour market needs, available opportunities and required specialities. In most cases, this is done in coordination with the academic advisory office.

Approximately 50% of respondents confirmed they had been approached / visited by major employers while at high school - while the other half stated this had not been the case, which challenges the consistency of this kind of initiative.

In the case of higher education institutions, collaboration appears in more forms, not necessarily with much more added value: the most significant being internships and scholarships. The question of the effectiveness of these relationships in adding value to graduates, the labour market and the nation as a whole, seems to be an area of concern.

The increasing concern associated with career education provides a gloomy prognosis: albeit the problem with career education might be linked to the absence of an appropriate framework to govern the methodology and deployed

tools (Cummings and Jecks, 2004; WB, 2005; Decter, 2009; Bunglawala, 2011), as well as the qualifications of the academic/career advisors involved as will be discussed in section 6.2.3.

Concluding Remark:

Though there are indications which suggest that workplace career education is more relevant and perhaps more focused than its counterpart in educational institutions, there are many signs and symptoms indicate that existing practices related to career education are inadequate in serving national developmental strategies effectively.

The absence of an appropriate framework to govern the methodology and deployed tools (Cummings and Jecks, 2004; WB, 2005; Decter, 2009; Bunglawala, 2011) seems to be linked to the increasing concern associated with career education, which implies a pressing need to introduce a more comprehensive, effective career education system in order to cover the different stages of an individual's life cycle as suggested by Nazli (2007), in such ways as to achieve the optimal utilization of the national human capital and attain the best for the individual and the nation.

6.2.2 The Responsibility of Key Stakeholders towards National Developmental Strategies

Qatar University (QU) appears a leader in education reform. It was emphasized during the interviews with QU academics and officials that:

> '*Qatar University had a major input in the Qatar 2030 Vision development and setting, and has continued to have a significant role in the implementation phase through the respective committees, taking into*

consideration that 'Education' is one main pillar in any human, social and economic development' (EDU 01, 2011).

However, in some cases, some faculties and colleges measured their performance by the number of students admitted and graduated rather than through successful entry for their graduates into the labour market and their effective engagement with the working environment. A senior engineering college official stated, for example, '*we need to maintain certain levels of admittance to maintain our image*', when asked by one of the employers about the possibility of setting additional measures to enable 'filtering the students' prior to admittance to the engineering college (cited by EMP01, 2011).

This suggests that not only employers look for ways of maintaining their public image, even if this may be in conflict with the national vision or strategies. Yet some employers measured their reputational performance by the number of fresh national graduates coming on board, and the percentage of Qatarization achieved, regardless of whether they were offering a stable career path for these graduates, or whether the increase in nationals' employment meant effective engagement with the work.

During the interview with the researcher, one of the employers stated:

'We are proud that we were able to continue being able to hire more and more national graduates compared to other organizations' (EMP 05, 2011).

At the same time, many interviewees emphasised that graduates themselves have a great responsibility for their own development and ability to benefit from the educational institutions, employers or other state or non-state organizations.

This represents one common point among interviewees from various parties: including educational institutions, employers, governmental authorities, and even the transitioned engineers, as suggested by the following view:

> '*I would strongly recommend and emphasize that they need to exert their utmost in learning and self-development and to have the sense of responsibility for such development, especially at the early stage of their entry to the labour market and to have the continual improvement as an ever-ending process*' (EDU 05, 2011).

In line with the above, some other parties emphasized that the sense of responsibility among fresh graduates could require more attention:

> '*In my opinion, many of the recent graduates are taking the privilege of the prosperous economy in a wrong way, by assuming that they don't need to exert real efforts for their own self-development, they feel that there are plenty of jobs available in the market, and hence enjoy the lack of job-competition in the labour market*' (OCP 06, 2011).

Linking this to Tomlinson (2007)'s classifications of graduates' orientations towards the labour market: it should not be assumed that all graduates have the same orientation, level of willingness or seriousness to benefit from the various offers:

In fact, this point pertaining to graduates' responsibility towards their own employability levels and professional development tallies with the concept of the 'stair of employability' set out earlier. It also implies the need for careful consideration when dealing with STWT: as it appeared in many cases that the attention of concerned parties was on educational institutions and employers, but a lot less on graduates/employees.

Anakwe et al. (2000) highlight the individual's ultimate responsibility self-development in such regard. It always needs to be borne in mind that unless the individual student, graduate or employee is taking ultimate responsibility for his/her own self-development, no matter what is done by the other parties; a significant gap would still exist.

This in fact suggests that for the key assumption of human capital theory to function in the real world of education, training and development processes, the 'recipient input' needs to be taken into consideration, as this input may act as governing factor for the overall output of these processes, in line with the suggestions of Dobbins et. al. (2014) discussed earlier in section 4.5.

Qatar Career Fair (QCF): The Bridging Facilitator:

Most stakeholders in the education and labour market do provide career guidance and counselling services (in one way or another) to the students and fresh graduates; however, as section 6.2.1 noted, there is a gap which exists at different stages of an individual's career life, albeit it may vary from one stage to another.

In light of this gap, and in line with its commitment to creating a career culture and spreading career awareness, QCF makes notable efforts and introduces initiatives to bridge the gap between the education system and the labour market, and between students/their parents and the education/labour market.

QCF have been of great help throughout this study: providing the researcher with access to closely observe and participate in various events and activities over a period of three and a half years, which has enriched the research with

valuable information, observations and findings.

The researcher's interest in identifying the role of this organization with respect to the STWT process emerged after recognizing the scope of the services which QCF is offering to society, and its evolving role in bridging the gap between students/their parents, the education system and the labour market.

In his illustration of QCF's mission during the interview, QCF Director, commented that:

> '*QCF is not just a fair; QCF's primary mission is to raise awareness among students and to lead them to learn that the real objective behind learning is to be able to make a contribution to our country's march toward progress. This can be done by choosing the right career to suit their aptitudes and qualifications and by engaging their parents in the choice*'.

> '*QCF is now a foundation upon which to build the human resources sector in Qatar. It is a meeting place for experts in every different area of human development - educators, entrepreneurs, employers and business leaders - in order to make every Qatari citizen's dream of career stability and welfare real. This, in turn will give the Qataris the opportunity to unlock their potential and push the wheels of development in our beloved homeland-Qatar*' (Al-Mansouri, 2011).

QCF's mission tallies with Ashton and Green (1996, p. 3) in promoting education for citizenship and contribution to national development: while fulfilling the individual-career match, career stability and welfare. The focus is not about securing a decent job or stable job income, but belonging to the country and demonstrating this through effective engagement and contribution

to its development and progress.

A privilege enjoyed by QCF is that it does not represent a governmental organization; but rather, a non-profit service-provider concerned with serving society and national development. This gives QCF the role of 'mediator' or 'facilitator' among the different parties concerned with STWT and career development: in particular, between the education sector and industry. This was reflected in the responses of the participants, as there was a general appreciation of its role; however, perceptions of the usefulness of QCF initiatives varied among the respondents.

When analysing the responses to the questionnaires (Figure 6.10), it is found that approximately 25% of high school students believed that QCF initiatives were very useful in helping them select their stream of study; while approximately 65% believed these were moderately useful. Among early-stage engineering students, approximately 38% believed that QCF initiatives were very useful in helping them select their field of study; while approximately 50% believed these had been slightly useful.

In the case of the final-stage engineering students, approximately 33% believed that QCF initiatives were extremely useful in their post-graduation employment plans; and 67% that they were of moderate usefulness.

Finally, when we look at fresh engineers' perceptions, the findings were still encouraging: 11% believed QCF's initiatives were extremely useful, 33%, very useful; 33%, slightly useful; and no responses suggested that QCF initiatives were 'not at all useful'.

These results suggest that QCF has begun to fulfil the much needed function of

bridging the gap between education and industry; as well as that between wider society, educational institutions and the labour market.

Moreover, the recently introduced initiative of 'career advisory training', is expected to assist considerably in remedying the existing gaps in career education illustrated in section 6.2.1 with regard to lack of formal professional qualifications among some of the career advisors, through equipping those career advisors with qualifications, skills and tools which would help them deliver a more professional service to their students, graduates and employees.

However, though such an initiative in itself is surely a step in the right direction, the outcomes might still disappoint if no appropriate framework is set to maintain consistency and measure the effectiveness of career advisory services delivered, as suggested by Martin et al. (2010) in regard of collaboration initiatives.

Figure 6.10: Qatar Career Fair Initiatives' Usefulness (Source: The Author's Survey)
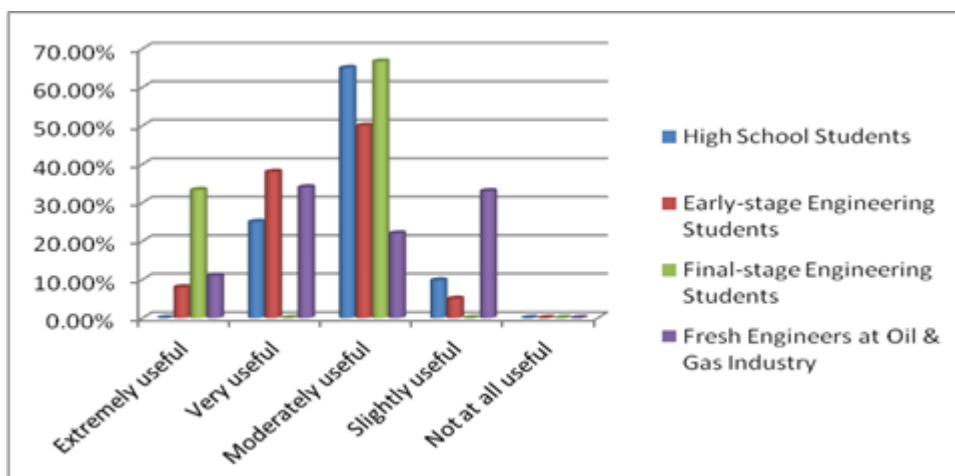
Concluding Remark:

Although many educational and labour market organizations do appreciate their role in furthering the national developmental strategies, there is still a tendency among different organizations to have limited organizational approaches that do not tally with the national developmental strategies, suggesting an impressive need for more of a social dialogue as argued by Cummings and Jecks (2004) in section 3.5.2 and emphasized earlier in section 6.1.1 and 6.1.5

At the same time, there seem to be some sort of a common opinion among the different parties that the graduates have a great responsibility for their own development and ability to benefit from the offerings being made by educational institutions, employers or by other state or non-state organizations, in line with the previous suggestions of (Kivinen, 1997; Pitcher and Purcell, 1998; Tomlinson, 2007; Cranmer, 2006; Mason et al. 2009; Brown et al. 2011; Pool and Sewell, 2007; Yorke and Knight 2006) discussed in Chapter 3 emphasizing that graduates have a major responsibility towards their own employability and self-development, and apparently, the higher the competition becomes, the higher responsibility it entails.

One main argument in this study, illustrated under the 'Stair of Employability' concept in section 6.1.5, emphasizes that building the sense of responsibility is a key to enhancing the outputs of any skill formation or development process, a key that would definitely help to illuminate the 'black box' of Ashton and Green (1996).

6.2.3 The need to work through national frameworks

While discussing the concept of education-industry partnership in Chapter 4, we briefly noted the influence of government policy on university-industry links (Decter, 2009); suggesting that the government may also have a significant role in facilitating relations between various stakeholders through support, encouragement and involvement through promoting a social dialogue as suggested by Cummings and Jecks (2004).

In fact, there is a need for a wider social dialogue, which extends to help form a national partnership among representatives of governments, employers, educators, students and workers, on issues of common interest relating to skill formation and national capacity building.

In line with that, Bunglawala (2011) suggests that 'Governments should establish a Strategic Employment and Growth Advisory Committee to operate as a platform for open dialogue between researchers, policy-makers, and employers across all sectors' (p.7).

The focus group discussion (FG, 2015) concluded that while there are diverse career awareness initiatives, there is no overarching national framework to organize, coordinate and assess the outcomes of such initiatives.

Moreover, (FG, 2015) concluded that along the lack of formal professional qualifications among some of the career advisors as discussed earlier in section 6.2.1, career advisory profession lacks any clear legal framework for performing career advisory services.

The conclusions drawn by the WB (2005) study, FG (2015) and the

researcher's own observations indicate an apparent lack of coordination among stakeholders when it comes to efforts and initiatives associated with national capacity building, as there is no such national framework within which different stakeholders can coordinate their efforts and initiatives.

The Need for a National Labour Market Information System:

As indicated in section 5.11, one of the limitations this research has encountered was the lack of a national source for labour market information, resulting in some conflicting information on certain occasions. The WB (2005) study suggests that there is a need to create a national mechanism for the coordination of all statistical activities between producers and users of official statistics. It also recommends increasing the frequency and coverage of labour market surveys to include important aspects, such as employers' expectations (WB, 2005, p. 24).

The WB (2005) study adds that 'Qatar has made a substantial investment in studying and evaluating its public education system, but little attention has been paid to the evaluation of workforce development programs' (WB, 2005, p. 90): for which reason the study suggests introducing adequate research and evaluation of workforce development.

Consistent to the WB (2005), the FG (2015) concluded that Qatar needs projected labour market information that would allow for knowledge exchange, engagement or strategic collaboration between policy, education and employment sectors on careers.

In this regard, it is seen that up-dated and adequate labour market information is a prerequisite for both Super's and Holland's theories to function, as such information is essential for an individual to know and understand the world of work with its specific occupations, and to complete appropriate tasks, such as exploration, filtering of options and matching with own interests, skills and values at appropriate times.

In fact, while (El Rassi, 2011; Harris-Bowlsbey, 2012) emphasize that if preliminary knowledge about individual's own-self and relevant skills are not gained at appropriate age levels, there will be a later impact on career maturity; it is argued here that if appropriate knowledge about labour market is not acquired at appropriate times, there is a chance for immediate impact on career decisions made by an individual, as ultimately career theories are mainly about making informed-decisions about someone's career, and unless the necessary information is available at the appropriate time, there will be doubt that the relevant decisions are the most appropriate ones.

The Need for Efforts Coordination and Effective Communication:

The WB (2005) suggests that existing training initiatives are not aligned with larger economic development strategy (WB, 2005, p. 84). It further informs us that 'the Planning Council report identified the risk that due to the absence of comprehensive strategy for training, existing supervisory bodies may act to serve their own needs at the ministerial level and not actual needs at the national level' (WB, 2005, p. 88).

This was supported by the conclusions drawn by FG (2015) suggesting that

there are no such national frameworks for knowledge exchange, engagement and strategic collaboration between policy, education and employment sectors on careers – only individual informal engagement occurs – leading to persistent education and skills challenges.

On the other side, a recently observed example, a key employer in the oil and gas industry introduced a new initiative to boost the knowledge and skills of its national engineers by enrolling all Qatari engineers, working in different organizational units across the company, as members of the Qatar Society of Engineers (QSE). The initiative suggests that this membership, covering all existing engineers as well as those who will join the employer in future, will facilitate the exchange of knowledge among national engineers in Qatar, and help them keep abreast with state-of-the-art technology and on-going developments in their various engineering disciplines.

This example illustrates how different efforts and initiatives are being introduced at individual organizations - but without national frameworks that would allow for these to be communicated, introduced, implemented and evaluated in a more effective, efficient manner. It further suggests that the government needs to have a more active role towards organizing efforts and initiatives associated with human capacity building, including the education-industry collaboration initiatives as suggested by Decter (2009) and Cummings and Jecks (2004).

Concluding Remark:

The conclusions drawn by the WB (2005) study, FG (2015) and the researcher's own observations indicate a lack of nationwide systematic approach in setting up the initiatives, relations and links associated with

national capacity building, including the ones associated with career education.

There are many signs and symptoms which indicate that the existing practices related to career education are inadequate to serve the national developmental strategies effectively, which may imply a pressing need for introducing a more comprehensive and effective career education system, including an appropriate framework for performing career advisory services, that would cover the different stages of an individual's life cycle, thus achieving the best use of the national human capital and attaining the best for the individual and the nation.

Furthermore, there continues to be a pressing need for a national labour market information system, despite previous studies such as that of the WB (2005) suggesting that there is a need to create a national mechanism for the coordination of all statistical activities between producers and users of official statistics.

From the perspective of Super's career development theory, the lack of an appropriate framework for career development activities would not help developing individuals' career maturity at the appropriate time. Moreover, from the perspective of Holland's career choice theory, the lack of an effective labour market information system would not help individuals making informed-decisions about their careers, as such information is essential for individuals to achieve appropriate knowledge and understanding of the world of work, and to complete appropriate tasks, such as exploration, filtering of options and matching with own interests, skills and values at appropriate times in line with the suggestions of (El Rassi, 2011; Harris-Bowlsbey, 2012).

Accordingly, the government is expected to have an active role in setting the

necessary nationwide overarching framework for skill formation and human capacity building, through a process of social dialogue that would allow for efforts coordination and exchange of information and experience among the different stakeholders, in line with the suggestions of Cummings and Jecks (2004).

6.2.4 Thinking Otherwise: Principle-based Career Education for Enhancing the Engagement Levels

Based on the discussion of findings associated with engineering education output (section 6.1.1), the key features of career education in Qatar (section 6.2.1), the responsibility of key stakeholders towards national development strategies (section 6.2.2) and the need for working through national frameworks (section 6.2.3), there seem to be a need for thinking of the efforts associated with career education in a different manner.

It was concluded that despite the generous spending and investment in skill formation and national capacity building, the outcomes are still below the expectations and do not seem to tally with the national developmental strategies.

Meanwhile, this study argues that any investment in human capital which aims to help form skills should focus on developing the "motivation from within" and "intrinsic values" in individuals, if such investment is to payoff, as emphasized earlier in section 4.3.3.

As noted earlier, Brown and Lent (2013, p. 2) suggest that one way to view the question of why people work is through the lens of Maslow (1943)'s hierarchy, where human needs range from basic survival (the need for food) all the way to

self-actualization (the need to realize our inner potential).

In a Qatari context (FG, 2015) concluded that when trying to identify suitable jobs, parents and students consider the salary, benefits, professional prospects, sector, as well of interest and ability of the student, implying that the wider aspects associated with nation and community do tend to be absent in such hierarchy of priorities.

Promotion of Intrinsic Values:

When we link the ideas of Ashton and Green (1996), Cable and DeRue (2002) and Brown and Lent (2013) to the desired outcome of investing money and effort in developing national human capital, along the lines stated by Sheikh Tamim Bin Hamad Al-Thani (2013), we might ask ourselves what may make a person (sometimes, even in the absence of tangible material remuneration) to effectively deliver, or even give, much more than the others, and perhaps even much more than expected?

Within a Qatari context and such a prosperous labour market, coupled with scarcity in national human capital and ready availability of various job offers and opportunities for Qataris, traditional monetary motives seem to be of less effect in motivating individuals towards higher levels of engagement and performance in education or work, thus there might be a strong need for the promotion of intrinsic values, through which individuals would look at education, training and working as noble functions in life.

In line with the discussions under the expectancy theory in section 4.3.4, it was suggested that educational or training input tends to result in different levels of output that may vary significantly and subjectively, depending on how the

recipient perceives that input.

Similar suggestion may apply to studying and learning, work and employment, academic or career guidance and any other type of activities or tasks being performed: as the final output of the individual is significantly influenced by the way they perceive that task or activity, and whether there are 'special values' associated.

Beidas (2009) emphasizes the necessity and importance of concepts such as 'Unsupervised Honesty', 'Quality from Within', 'Self-Discipline', 'Man as God's Vicegerent' and 'Self-Appraisal' as driving forces behind 'good' performance and powerful regulators of human behaviour (2009, p. i).

The suggestions of (Ashton and Green, 1996; Beidas, 2009) support a key argument of this study about the need to promote intrinsic values: to establish a 'motive from within', which could be much greater than any monetary or material motive.

Indeed, it is evident in historical human experience that even when economic growth and wealth allow for over-satisfying an individual's essential material needs, there is no much guarantee that individuals will perform or deliver appropriately: implying there is always a need for something to act from 'within the individual' to sustain or even improve performance.

Calling for Individual-Nation (I-N) Fit and Organization-Nation (O-I) Fit:

Ashton and Green (1996) imply that for some people, the motivation behind obtaining education or training has much wider elements than just a better quality of life, higher pay or position. In previous discussions, it was noted that

interests and values do have a major role to play in one's career planning, and in which Rehfuss et al. (2012) concluded that the N-S fit represents the most important aspect among the three P-E aspects, followed by the P-O fit. Cable and DeRue (2002) suggest that 'when individuals experience P-O fit, they feel connected to the mission of the organization and are more likely to put the benefits of the organization above themselves and find it difficult to leave' (Cable and DeRue, 2002; Resick et al., 2007; cited in Rehfuss et al., 2012, p.145).

Earlier in section 4.2.3, we looked at the concept and importance of the person-organization (P-O) fit (Rehfuss et al., 2012), in stimulating a person to do their utmost to deliver within an organization. If we extend this sort of fit more widely so that it is established between individual and nation in one relationship, as well as between organization and nation in another, this would result in two more types of fit (perhaps unique ones), and represent an addition to the ideas of Cable and DeRue (2002).

In Chapter 4 the expectancy theory of Vroom (1964) was examined with the main intention to help achieving a better understanding of the role of 'motives' in the outcome of educational and training processes.

In this study, it is argued that the utilization of this theory can even be extended to address the motivation aspect among organizations such as educational and labour market firms from an organizational perspective, that is to say that establishing 'motives from within' based on intrinsic values may apply to individuals as well as organizations.

Individual-Nation (I-N) Fit:

In this study, it is argued that this intrinsic fit exists when the individual has the profound feeling and belief of belonging to their own nation. It is a unique sought fit, where the feeling of belonging is translated into good deeds, commitment and utmost dedication to the priorities and benefits of the nation. It goes far beyond 'good citizenship', which can be considered a feature of the I-N fit, but not an alternative to it.

Theoretically though, while talking about this type of fit might be deemed normal, to turn this concept into reality would require powerful values for the individual to believe in; and most importantly, for them to live and practise such values and beliefs in their daily lives.

In fact, one way to understand the concept of (I-N) fit is through applying the argument of Beidas (2009) with regard to the necessity and importance of concepts such as 'Unsupervised Honesty', 'Quality from Within' as 'Self-Discipline' as driving forces behind 'good' performance and powerful regulators of human behaviour to the main assumptions of HC and Expectancy theories and the type of outcomes or performance that would result.

Organization-Nation (O-I) Fit:

Another intrinsic and unique fit exists when the organization has the set-up, policies and practices, and much more importantly, human capital who possesses the (I-N) fit, to ensure that its business operations and activities are performed in line with the interests and benefits of the nation as a whole: not only in line with the limited benefits of the organization itself.

Similar to the (I-N) fit, (O-N) goes far beyond 'Organizational Citizenship', which can be considered as a feature of O-N, but not an alternative to it.

In light of the above, it is essential to build and strive for the (I-N) fit: which certainly requires joint efforts from all concerned parties and stakeholders in a form of real social dialogue (Cummings and Jecks, 2004), including schools, universities, employers, governments and parents, to implant, promote and sustain intrinsic values in individuals, through which teaching, training, coaching, working and every task become noble functions in life.

The Principle-based Career Education:

In view of the above discussion, perhaps there is a need to think in career education in a different manner through linking the process of career choice and development to the wider aspects of the (I-N) and (O-N) fit relations, that is to say using career education process for creating the 'motives from within' among students and graduates to link to the wider national picture, and engage with the wider interest of the nation through using the career education process for paving the way towards establishing the (I-N) and (O-N) fit relations.

The (I-N) and (O-N) fit relations sought here are not fits for matching interests or orientations, but cases of harmony and synergy. They do not imply eliminating or marginalizing the individual's or organization's own needs and requirements; but aim to build, develop and boost the entire nation. Seeking such a fit amounts to a call to enhance national human capacity building efforts, including the education-industry partnership, by promoting intrinsic values: aimed at making it come 'from within' the people.

The discussions above suggest an imperative need for the impetus for change to come from within the different stakeholders; and for them to realize their 'national obligation' in contributing to national development, while thinking about and working on their own development.

The creation of such a sense of national obligation can be achieved through a continuous nation-wide career education process, within which the promotion of intrinsic values of 'nationalism' and 'feeling of belonging' forms the foundation, which would encourage individuals and organizations to strive for lasting 'national embedded ideals', without overlooking the presence of effective measures for guiding, evaluating and monitoring performance and results.

Throughout the research, education, industry and graduates were the key elements in the STWT process, with an apparent significant influence for the state in formulating relations among these elements.

The following model – this thesis' second original contribution to knowledge – summarizes the concept of Principle-based Career Education, aimed for establishing the (I-N) and (O-N) fit relations.

The Principle-based Career Education Model:

The Principle-based Career Education Model shown in figure 6.11 suggests that the formation of individuals' skills and competences mainly requires an appropriate realization of self-capabilities and desires (internal knowledge), as well as of majors, jobs, market features and requirements (external knowledge); but once this education is built on a base of principles and intrinsic values, the outcome will not only involve the formation of skills and employability, but also

result in an effective engagement with the world of work and an individual-nation (I-N) fit full of belonging and giving.

Figure 6.11 implies that career education can be utilized as a process not only for benefiting individuals, but for benefiting individuals, business, community and the nation as a whole, once this process is founded on intrinsic principles.

This perhaps represents a different way of thinking of skill formation and career choice and development in light of Human Capital theory, Super's career development theory, and Holland's career choice theory by linking it to the Expectancy theory and the views associated with the role of motivation as noted earlier in section 4.3.4 (Lee, 2007; Lai, 2011; Rehfuss et al., 2012; Parijat and Bagga, 2014), and further argues that Vroom's expectancy theory can be utilized in addressing the motivation aspect among all concerned stakeholders, through having the career education process used as a vehicle towards formation of skills and employability, effective engagement, and much more important, towards individual-nation (I-N) once this education is built on a base of principles and intrinsic values.

Figure 6.11: The Principle-based Career Education Model (Source: The Author)

Principle – Based Career Education

Engagement with Labour Market and Achievement of Individual – Nation Fit

Skill formation and Employability

External Knowledge (Environmental Knowledge)

Internal Knowledge (Self-Knowledge)
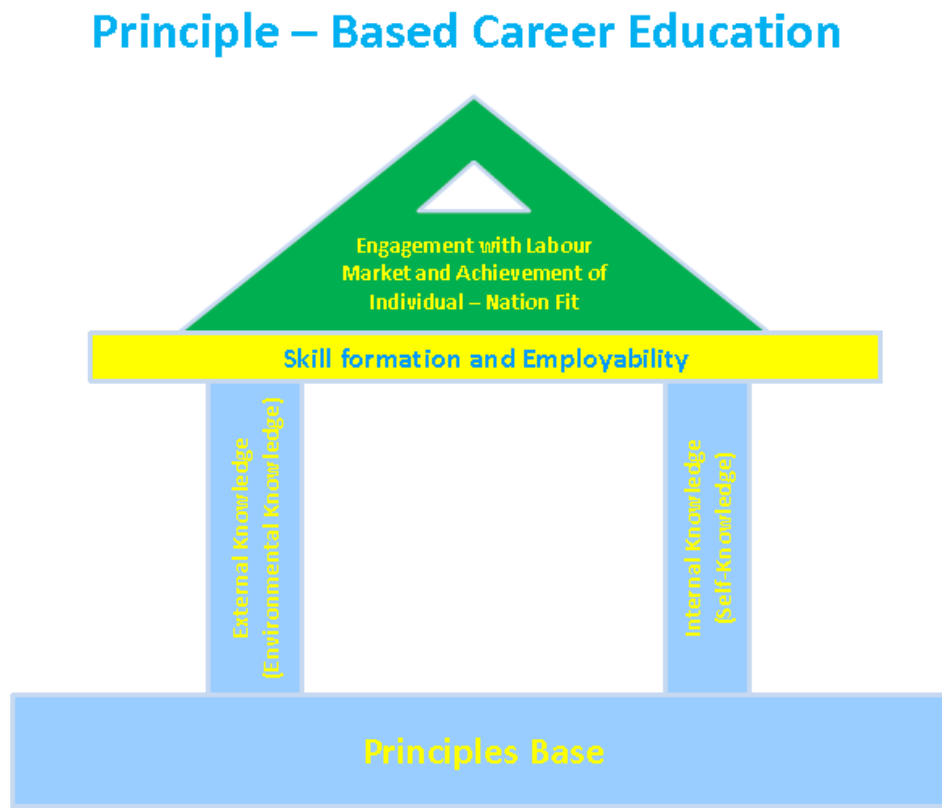
Principles Base

In sum, it is argued in this study that creating (I-N) and (O-N) fit relations through 'Principle-based Career Education', would enhance students' academic performance, facilitate the STWT, boost employees' engagement; and much more importantly, turn investment in human capital from a limited 'black box' (Ashton and Green, 1996, p. 33) into 'an amplifying box' that turns simple inputs into outputs with greater values for individuals and the entire nation.

In that case, the 'Principle-based Career Education' would be a key feature of an Education-Industry Partnership that is built-in within a greater partnership, which can best be called the 'National Partnership'.

Concluding Remark:

Within a Qatari context and such a prosperous labour market, coupled with scarcity in national human capital and ready availability of various job offers and opportunities for Qataris, traditional monetary motives seem to be of less effect in motivating individuals towards higher levels of engagement and performance in education or work, thus there might be a strong need for the promotion of intrinsic values, through which individuals would look at education, training and working as noble functions in life.

In linking the ideas of Ashton and Green (1996), Cable and DeRue (2002) and Brown and Lent (2013) to the desired outcome of investing money and effort in developing national human capital, along the lines stated by Sheikh Tamim Bin Hamad Al-Thani (2013), it is argued that there is an imperative need to make the impetus to change come from within different stakeholders, for which this study chooses to extend the utilization of the expectancy theory to address the motivation aspect among individuals as well as organizations, in such a manner to say that establishing 'motives from within' based on intrinsic values may apply to individuals as well as organizations.

Coupling between the extension of expectancy theory utilization and the extension on the person-organization (P-O) fit concept of Cable and DeRue (2002, cited in Rehfuss et al., 2012), this study derives the concept of establishing the fit relations between individual and nation (I-N) in one relationship, as well as between organization and nation (O-N) in another.

One way to understand the concept of (I-N) fit is through applying the argument of Beidas (2009) with regard to the necessity and importance of concepts such

as 'Unsupervised Honesty', 'Quality from Within' as 'Self-Discipline' as driving forces behind 'good' performance and powerful regulators of human behaviour to the main assumptions of HC and Expectancy theories and the type of outcomes or performance that would result.

In striving for establishing these (I-N) and (O-N) relations, the researcher here introduces the concept of 'Principle-based Career Education', through which career education can be utilized as a process to bring benefit to the nation as a whole, once this process is founded on intrinsic principles.

6.3 SUMMARY

This chapter allowd for illuminating the research data through the selected theoreticial lenses and drawn the discussion under two main analytical, thematic headings: the interacting roles of key stakeholders towards facilitating the school-to-work transition process; and towards enhancing the national capacity building and the engagment levels through the promotion of intrinsic values.

This chapter set out this thesis' two original contributions to knowledge, derived from the discussions and findings: the Stair of Employability; and the Principle-Based Career Education. The former represents a different way of thinking of employability in association with the STWT process; the latter represents a different way of thinking of career choice and development in association with the promotion of intrinsic values.

Based on the findings, the thesis is also able to provide a refined definition of employability; and discuss how the roles of educators, employers, graduates

and governments interact overall the STWT process.

The next chapter will summarize the key findings of the research; discuss implications for theory and policy; conclude contribution to knowledge and make recommendations for further research.

CHAPTER 7: CONCLUSIONS AND IMPLICATIONS

7.0 INTRODUCTION

The previous chapter presented a detailed review of data analysis and the research findings. The results revealed a common realization of the necessity to integrate efforts in order to have a smooth and successful entry of graduates into the labour market, and higher levels of engagement. Yet the existing forms of cooperation between the educational sector and industry are still limited in breadth and depth.

The results reflected various gaps in relation to career education adequacy and effectiveness, but perhaps with different intensities at different stages, which do not help building national capacity in line with what the national developmental strategies are striving for.

The study also revealed that current labour market orientations and trajectories of the Qatari engineering graduates do neither seem to help satisfy business needs within the oil and gas industry nor tally with the national developmental strategies.

This chapter will summarize the key findings of the research; discuss implications for theory and policy; sum up the contribution of this study to the existing body of knowledge and illustrate key limitations. It then identifies key areas worthy of further work, particularly to areas associated with graduate employability, school-to-work transition, education-industry partnership and career education.

7.1 SUMMARY OF KEY FINDINGS

Based on the analysis and discussions performed in Chapter 6, the following key findings can be distilled out, in which the answers to the research sub-questions, and hence the research main questions are provided.

In order to sum up the results of this study and maintain the coherence among its different sections, it is selected here to present the key findings by summarising the detailed findings in Chapter 6 under the relevant research sub-question (as set earlier in Chapter 4) for which they provide an answer:

Now starting with the 1st research sub-question:

- **How do high school students, engineering students and engineering graduates perceive the engineering field, particularly within the oil and gas industry? What do different parties and stakeholders expect from each other with respect to STWT?**

When looking at the results from the perspective of perception; starting with high school students and moving forward through early-stage engineering graduates and reaching to final-stage engineering students, there seem to be a declining aspiration path towards the engineering labour market, in contrary to the suggestions of Super's career choice theory, as it would be anticipated that the determinacy levels would increase among students as they progress with their studies, as more awareness about available options in the labour market would be obtained as per Super's theory (Harris-Bowlsbey, 2012).

Furthermore, the engineering graduates were expressing lower levels of flexibility towards the labour market which seems quite flexible in offering

various options for Qatari engineering graduates, which could be linked mainly to the cultural aspects and prosperous economic circumstances.

This in fact does support the previous argument of Osipow and Fitzgerald (1996) that a particular weakness of Super's theory is its failure to integrate economic and social factors that influence career decisions, as seems to be the case in a Qatari context.

From the education output perspective, the analysis revealed that there seems to be no significant concern with the teaching effectiveness provided by the engineering schools, particularly with regard to theoretical knowledge, however, this does not seem to be the case when it comes to other skills more valued by the labour market, such as the willingness to learn and accept responsibility, the ability to work under pressure or the ability to plan and think strategically.

In addition to the gap associated with the labour market-related skills, an evidence of weak links between universities and their graduates does exist, whereas it is emphasized in this study that the role of colleges and universities should not be limited to the teaching activities within the limited 4-5 years of studying, rather it should extend over the career life-cycle of a student in interactive manner within a social dialogue as suggested by Cummings and Jecks (2004).

At the same time, while the findings suggest that the oil and gas industry does provide rich and advanced learning and development opportunities for its employees, the analysis suggest as well that there is an evolving concern about the oil and gas industry's attractive position among engineering graduates, especially with the progressive positions of other industries within the labour

market.

In light of the expectancy theory, these findings might question the motivation levels among these graduates towards working at the oil and gas (Lee, 2007; Parijat and Bagga, 2014) on one side, but may suggest on the other side a question about career maturity among these graduates, that is, the ability to cope well with career development tasks at a later life stage as argued by (Osipow and Fitzgerald, 1996; Harris-Bowlsbey, 2012; El Rassi, 2011; Nazli, 2007) in section 4.2.

Furthermore, this suggests that seeking to explain the gains of education and training as a form of investment in human resources, with the main proposition is that people are considered a form of capital for development' (Aliaga 2001; Becker, 1993; Benhabib and Spiegel, 1994; Engelbrecht, 2003; Hendricks, 2002, cited in Nafukho et al., 2004, p. 546), without paying adequate attention to the human aspect in this equation might still result in the 'black box' of Ashton and Green (1996).

Now we move to the 2nd research sub-question:

- **What forms of collaboration exist between the education sector and the oil and gas industry in a Qatari context? How might these be enhanced?**

Different forms of collaborations between education and industry appeared particularly after the Qatar University (QU) Reform Project in 2003, mainly in the form of scholarships, training, recruitment and consultation, however, the existing collaboration links are varying in terms of intensity and consistency. In

some cases the relationship tends to take a ceremonial approach and is mixed up with organizational image building. At the same time, these links do not seem to present the role of 'serving the community' being a key role for universities in many knowledge-based economies as suggested by Decter (2009).

Furthermore, it is found that there is a lack of effective education-industry links when it comes to high schools, which even tends to disappear altogether at the earlier schooling stages (i.e. preliminary and elementary education), against the suggestions of (Nazli, 2007) and Anakwe et al. (2000) as explained in sections 3.4 and 4.3, and against one key argument of this research, that the education-industry relationship should not be limited to the university-industry collaboration, but needs to extend to include the other educational stages.

In this regard, Super's approach proposes that it is the individuals' responsibility to identify and develop their own skills at different age levels, and these need to be built and developed, through integrated and combined efforts from all stakeholders, over an individual's life span (Tomlinson, 2007; Nazli, 2007; Rassi, 2011; Harris-Bowlsbey, 2012; Rehfuss et al., 2012) with the aim to establish, develop and enhance individuals' employability, however, there seem to be a need for thinking of the efforts and initiatives associated with graduates' skill formation and employability in a different manner.

In thinking of potential ways to enhance the relationships between the different stakeholders; this study introduced the concept of 'Stair of Employability' to differentiate between what is suggested to represent 'preliminary employability', and what may represent 'continual employability'. This concept could be useful

in differentiating between the varying levels of responsibility among key stakeholders at two distinct stages of career life.

Consistent with the above, and while Andrews and Higson, 2008; Hillage and Pollard, 1998, cited in Pool and Sewell, 2007; Yorke and Knight, 2006) have defined employability in different ways depending on their perspective as explained in Chapter 3; this study suggests that employability can be defined as 'the ability of an individual to effectively utilize the right set of continually improving knowledge and skills in a labour market that offers the opportunity for such utilization'; whereby this definition represents the concept of the 'stair of employability' in light of the previously discussed STWT stages; and interprets employability as a joint responsibility of educators, policymakers, employers and graduates.

Furthermore, the concept of 'Stair of Employability' introduced in this study provides a conceptual realization about the roles of key stakeholders towards the STWT and the overall skill formation process, and suggests that failure or deficiency of any of these parties in fulfilling their role may cause the 'employability vehicle' to either stop or malfunction, and the 'stair of employability' to collapse.

Accordingly, there is a need in a Qatari context for the education-industry collaboration to be extended to cover all stages of an individual's skill formation and career building life cycle; and to aim for successful models, but perhaps expanded ones, similar to the ones cited by Neumann and Banghart (2001), Martin et al. (2010) and El Karkouri (2011) in section 3.5.

Now we move to the 3rd research sub-question:

- **What might other state and non-state stakeholders do to enhance national human capacity building efforts, particularly these associated with career education?**

Though there are indications which suggest that workplace career education is more relevant and perhaps more focused than its counterpart in educational institutions, there are many signs and symptoms indicate that existing practices related to career education are inadequate in serving national developmental strategies effectively.

Furthermore, although many educational and labour market organizations do appreciate their role in furthering the national developmental strategies, there is still a tendency among different organizations to have limited organizational approaches that do not tally with the national developmental strategies, suggesting an impressive need for more of a social dialogue as argued by Cummings and Jecks (2004) in section 3.5.2 and emphasized earlier in section 6.1.1 and 6.1.5

At the same time, there seem to be some sort of a common opinion among the different parties that the graduates have a great responsibility for their own development and ability to benefit from the offerings being made by educational institutions, employers or by other state or non-state organizations, in line with the previous suggestions of (Kivinen, 1997; Pitcher and Purcell, 1998; Tomlinson, 2007; Cranmer, 2006; Mason et al. 2009; Brown et al. 2011; Pool and Sewell, 2007; Yorke and Knight 2006) discussed in Chapter 3 emphasizing that graduates have a major responsibility towards their own employability and self-development, and apparently, the higher the competition becomes, the

higher responsibility it entails.

One main argument in this study, illustrated under the 'Stair of Employability' concept in section 6.1.5, emphasizes that building the sense of responsibility is a key to enhancing the outputs of any skill formation or development process, a key that would definitely help to illuminate the 'black box' of Ashton and Green (1996).

In a Qatari context, perhaps it is even legitimate to argue that the employability definition adopted by this study tallies with the essence of QNV 2030, which strives for quality and the effective engagement of human capital within social and economic development.

The conclusions drawn by the WB (2005) study, FG (2015) and the researcher's own observations indicate a lack of nationwide systematic approach in setting up the initiatives, relations and links associated with national capacity building, including the ones associated with career education.

The absence of an appropriate framework to govern the methodology and deployed tools (Cummings and Jecks, 2004; WB, 2005; Decter, 2009; Bunglawala, 2011) seems to be linked to the increasing concern associated with career education, which implies a pressing need to introduce a more comprehensive, effective career education system in order to cover the different stages of an individual's life cycle as suggested by Nazli (2007), in such ways as to achieve the optimal utilization of the national human capital and attain the best for the individual and the nation.

Furthermore, there continues to be a pressing need for a national labour market

information system, despite previous studies such as that of the WB (2005) suggesting that there is a need to create a national mechanism for the coordination of all statistical activities between producers and users of official statistics.

Now we move to the 4th and last research sub-question:

- **What might motivate Qatari students and graduates? And is it only about having policies, systems and procedures in place, or does something else need to be enhanced, to make the impetus come 'from within' the people?**

Within a Qatari context and such a prosperous labour market, coupled with scarcity in national human capital and ready availability of various job offers and opportunities for Qataris, traditional monetary motives seem to be of less effect in motivating individuals towards higher levels of engagement and performance in education or work, thus there might be a strong need for the promotion of intrinsic values, through which individuals would look at education, training and working as noble functions in life.

In linking the ideas of Ashton and Green (1996), Cable and DeRue (2002) and Brown and Lent (2013) to the desired outcome of investing money and effort in developing national human capital, along the lines stated by Sheikh Tamim Bin Hamad Al-Thani (2013), it is argued that there is an imperative need to make the impetus to change come from within different stakeholders, for which this study chooses to extend the utilization of the expectancy theory to address the motivation aspect among individuals as well as organizations, in such a manner to say that establishing 'motives from within' based on intrinsic values may

apply to individuals as well as organizations.

Coupling between the extension of expectancy theory utilization and the extension on the person-organization (P-O) fit concept of Cable and DeRue (2002, cited in Rehfuss et al., 2012), this study derives the concept of establishing the fit relations between individual and nation (I-N) in one relationship, as well as between organization and nation (O-N) in another.

It is suggested in section 6.2.4 that one way to understand the concept of (I-N) fit is through applying the argument of Beidas (2009) with regard to the necessity and importance of concepts such as 'Unsupervised Honesty', 'Quality from Within' as 'Self-Discipline' as driving forces behind 'good' performance and powerful regulators of human behaviour to the main assumptions of HC and Expectancy theories and the type of outcomes or performance that would result.

In striving for establishing these (I-N) and (O-N) relations, the researcher here introduces the concept of 'Principle-based Career Education', through which career education can be utilized as a process to bring benefit to the nation as a whole, once this process is founded on intrinsic principles.

7.2 POLICY IMPLICATIONS

Through this study, it has become evident that an effective education-industry partnership should lead to an effective career education that would facilitate smooth entry into the labour market and effective engagement with the world of work; which will ultimately lead to higher individual satisfaction, and an enhanced economic performance.

It has also become evident that overspending and investment in education and training without paying attention to enhancing the 'motives from within' may not payoff in terms of performance of engagement.

It is therefore imperative for policymakers to reconsider their approach towards establishing a real national partnership, away from sonorous slogans and simulated approaches, in line with the suggestions of Feldman and Whitcomb (2005); El Rassi (2011); Rehfuss et al. (2012).

Policymakers need to work on enhancing the sense of responsibility among students (Pool and Sewell, 2007; Yorke and Knight, 2006), and graduates need to be considered when dealing with STWT, as it appeared in many cases that attention was focused on educational institutions and employers, rather than on the role of graduates/employees themselves towards their own employability and professional development (Pastore, 2008; Matsumoto and Elder, 2010; Garrouste and Loi, 2011).

As noted earlier in section 4.5, Dobbins et. al, (2014) suggest that the human capital theory, as well as the state policies (for which the HC theory proved to be alluring), revolved around investing more in education and training (the supply part) with less attention to the 'recipient's input' towards such skill formation processes.

One main argument in this study, illustrated under the 'Stair of Employability' concept in section 6.1.5, emphasizes that building the sense of responsibility is a key to enhancing the outputs of any skill formation or development process, a key that would definitely help to illuminate the 'black box' of Ashton and Green (1996).

Policymakers need to gather the components of the nation around intrinsic values and idealistic principles that raise levels of self-monitoring, accountability and attachment to the nation, starting with the individual as the foundation stone. Policymakers should also re-assess the existing situation and reflect carefully on potential non-typical motives that might best fit the Qatari nation, in line with Ashton and Green (1996) and Beidas (2009) arguments, and in light of the 'Principle-based Career Education' concept introduced in this study.

Furthermore, and as discussed in section 6.2.3, it is seen that from the perspective of Super's career development theory, the lack of an appropriate framework for career development activities would not help developing individuals' career maturity at the appropriate time. Moreover, from the perspective of Holland's career choice theory, the lack of an effective labour market information system would not help individuals making informed-decisions about their careers, as such information is essential for individuals to achieve appropriate knowledge and understanding of the world of work, and to complete appropriate tasks, such as exploration, filtering of options and matching with own interests, skills and values at appropriate times in line with the suggestions of (El Rassi, 2011; Harris-Bowlsbey, 2012).

Consistent with the above, the 'Principle-based Career Education' introduced in this study still have the 'Internal Knowledge' and the 'External Knowledge' as the two main pillars for such career education process, whereby the 'Internal Knowledge' pillar would require an appropriate framework for career development activities that would help developing individuals' career maturity at the appropriate time, in line with Super's assumptions, whereas the 'External

Knowledge' pillar would require effective labour market information system that would help individuals making informed-decisions about their careers, in line with Holland's assumptions.

Therefore, policymakers need to establish an effective, nationwide career education system that fulfils the ambitions of QNV 2030 and labour market requirements. Such a system should cover the different schooling stages (Nazli, 2007, p. 446), and continue throughout the individual's career life (Anakwe et al., 2000; Pringle and Gold, 1989).

Meanwhile, for such systems and approaches to have the desired outcome, there need to be appropriate guidelines, evaluation measures and key performance indicators. This would enable the transformation of grand visions into realities, turning ceremonial collaboration into truly effective partnership, and career education activities into real value-adding tools for individuals, organizations and the community (Martin et al., 2010).

Accordingly, the state (represented by the government) is expected to have an active role in setting the necessary nationwide overarching framework for skill formation and human capacity building, through a process of social dialogue that would allow for efforts coordination and exchange of information and experience among the different stakeholders, in line with the suggestions of Cummings and Jecks (2004).

7.3 THEORY IMPLICATIONS

Current discourse among policymakers, employers and educators on the approach to facilitate the STWT and enhance the employability of graduates is mainly focused on increased investment in schooling, education and training, heavily related to career development theories (Pringle and Gold, 1989; Harris-Bowlsbey, 2012) and human capital theory (Ashton & Green 1996; Nafukho et al., 2004). Yet this research makes it evident that this can only form part of the solution (Aliaga 2001; Becker 1993; Benhabib and Spiegel 1994; Engelbrecht 2003; Hendricks 2002, cited in Nafukho et al. 2004; Zamora, 2006): human capital theory 'feeds us only a limited 'black box' of the effect of training on economic performance' (Ashton and Green, 1996, p.33); while educational or training input tends to result in different levels of output: which may vary significantly and subjectively depending on different factors.

In this study, it is argued that for the key assumption of human capital theory to function in the real world of education, training and development processes, the 'recipient input' needs to be taken into consideration, as this input may act as governing factor for the overall output of these processes, in line with the suggestions of Dobbins et. al. (2014) discussed earlier in section 4.5.

In this regard, the declining aspiration path among engineering graduates or the concerning orientations and trajectories towards the labour market despite the prosperous economic conditions and generous investment in education and training, might represent an example of Ashton and Green (1996) 'Black Box' in a Qatari context and confirms the inability of human capital theory to provide an adequate answer for such phenomenon without consulting the earlier

267

arguments made in section 4.2 and 4.3 with regard to Super's, Holland's and Expectancy theories, although, Super's theory in career development failed to integrate economic and social factors that influence career decisions; while Holland's theory failed to address the issue of change in environments and individuals, (Osipow and Fitzgerald, 1996).

Linking the ideas of Ashton and Green (1996); Cable and DeRue (2002); Brown and Lent (2013) and Beidas (2009) with those of Osipow and Fitzgerald (1996); and Mitchell and Krumboltz (1996) to the findings of this research, it is argued in this study that any investment in human capital which aims to help form skills should not omit developing the "motivation from within" individuals, as from a human factor perspective, the motivation element can still make a significant difference in the output of any skill formation process, in line with the suggestions of Lee (2007) that Vroom's Expectancy theory do reveal implications for the explanation of the motivational factors of individuals to various situations or settings, including the performance at work.

Moreover, and despite examining the expectancy theory of Vroom (1964) in Chapter 4 was mainly intended to help achieving a better understanding of the role of 'motives' in the outcome of educational and training processes, it is argued in this study that the utilization of this theory can even be extended to address the motivation aspect among organizations such as educational and labour market firms from an organizational perspective, rather than an individual's perspective only, and that is to say that establishing 'motives from within' based on intrinsic values may not only apply to individuals, but also to organizations as discussed in section 6.2.4.

7.4 CONTRIBUTION OF THE RESEARCH TO THE EXISTING BODY OF KNOWLEDGE

As noted in the introduction, the literature within this particular area referring to a Qatari context is very limited, rendering the research as well as its findings unique. It forms a significant addition and sets a new foundation stone on which to build further.

In addition, when considering the interpretation of 'originality' by Finn (2005) and Phillips and Pugh (2010), the research introduces two main contributions to the wider existing body of knowledge:

Derived from discussions and findings; Section 6.1.5 and 6.2.4 set out this thesis' two original contributions to knowledge: the Stair of Employability and the Principle-Based Career Education, respectively. The former represents a different way of thinking of employability in association with the STWT process; the latter represents a different way of thinking of career choice and development in association with the promotion of intrinsic values.

The Stair of Employability concept, as presented in Figure 6.7 – this thesis' first original contribution to knowledge – differentiates between 'preliminary employability', and 'continual employability'. This is useful in differentiating between the varying levels of responsibility among key stakeholders (educational institutions, employers, graduates and the state) at two distinct stages of career life.

This concept implies that continual employability continues to develop over time

as a lifelong process, and does not stop at a certain stage of a career life, and this perhaps represents a different way of thinking of employability in light of Super's career development theory and the views associated with skill formation as noted earlier in section 4.2.1 (Brown et al., 2011; Tomlinson, 2007; Kivinen, 1997; Nazli, 2007; Pool and Sewell, 2007; Andrews and Higson, 2008; Rehfuss et al., 2012; Rassi, 2011; Harris-Bowlsbey, 2012), and further argues that the Super's stages of career development do not just occur in such unintentional manner, rather it has to be driven through interactive and accumulative efforts by all concerned stakeholders.

The concept of the 'Stair of Employability' is useful as well for thinking of how employability, in its two distinct levels, (preliminary employability and continual employability), is associated with the three distinct STWT stages (Pre-STWT, STWT and Post-STWT) in a manner that helps identify and understand the responsibilities associated with each key stakeholder, towards developing an individual's employability over the STWT stages.

The 'Principle-based Career Education' concept as presented in Figure 6.11 – this thesis' second original contribution to knowledge – summarizes the concept of Principle-based Career Education, aimed for establishing the (I-N) and (O-N) fit relations.

This concept implies that career education can be utilized as a process not only for benefiting individuals, but for benefiting individuals, business, community and the nation as a whole, once this process is founded on intrinsic principles.

This perhaps represents a different way of thinking of skill formation and career choice and development in light of Human Capital theory, Super's career development theory, and Holland's career choice theory by linking it to the Expectancy theory and the views associated with the role of motivation as noted earlier in section 4.3.4 (Lee, 2007; Lai, 2011; Rehfuss et al., 2012; Parijat and Bagga, 2014), and further argues that Vroom's expectancy theory can be utilized in addressing the motivation aspect among all concerned stakeholders, through having the career education process used as a vehicle towards formation of skills and employability, effective engagement, and much more important, towards individual-nation (I-N) once this education is built on a base of principles and intrinsic values.

The concept introduces a different approach in striving for an effective national partnership through establishing the (I-N) fit and (O-N) fit , and emphasizing the role of 'motives from within' based on promoting intrinsic values among educators, employers, students, employees and others in creating these fit relationships. It is mainly argued in this study that having career education founded on a base of principles and intrinsic values would enhance students' academic performance, facilitate the STWT, boost employees' engagement, and much more importantly, turn human capital from a limited 'black box' (Ashton and Green, 1996, p. 33) into 'an amplifying box' that turns simple inputs into great outputs.

Finally, it argued that albeit these two new concepts were developed in a Qatari context, both can still be utilized in a wider context, regardless of the geographic, cultural or economic conditions.

7.5 LIMITATIONS OF THE RESEARCH

As noted in Section 5.11, this study deployed an exploratory approach that allowed for exploring the areas that require attention from the education-industry partnership in order to minimize the obstacles associated with the transition process, identifying the potential ways through which other stakeholders may help enhance the education-industry partnership and identifying potential models which both help explain and can aid policymakers in bolstering the education-industry partnership towards facilitating the school-to-work transition and enhancing the engagement levels with the labour market.

The research design of this study is in the form of an exploratory research., which is often argued does not allow for definite answers, however, as noted in the earlier sections, this study still offers appropriate insight and understanding of the phenomenon under study in a Qatari context, and further introduces the concepts of 'Stair of Employability' and 'Principle-based Career Education' that can be utilized in the wider context.

Furthermore, the survey methodology, although it attempted to be comprehensive, provides only snapshots of the different stages within the STWT process, by taking a sample of students/graduates that represented each stage. A large-scale longitudinal study could be more useful, and would allow for a 'video' of the transition process of a more comprehensive sample: whereby the same sample of engineering students, both sub-groups (early stage and final stage), and the fresh engineers sub-group, could be interviewed at a later stage after experiencing the transition process in the industry: to compare their initial perceptions/orientations with 'real experience' outcomes,

and further understand the underlying causes associated with the difficulties faced during the transition process as well as the way in which graduate orientations towards the labour market might change.

However, such information can only be gathered through in-depth one-to-one interviews and by observing or interviewing the targeted groups over a period of time, perhaps two to three years minimum.

Associated with the research design and methodology, one of the limitations associated with this research was related to the targeted participants: particularly their willingness to voluntarily participate in research which was not supported or sponsored by a government or well-known entity.

7.6 FURTHER RESEARCH

As explained in section 5.1, in deploying an exploratory research design, the study succeeded in establishing better insights, generating new ideas, and providing an opportunity to define new terms and clarify existing concepts pertaining to the role of education-industry partnership in facilitating the transition process of graduates into the labour market and enhancing their performance levels, in consistence with the research objectives as illustrated earlier in section 1.3.

In the policy arena or applied to practice, exploratory studies are often suggested to help establish research priorities.

The literature review and the research findings enabled the identification of some areas which merit further scholarship:

1. It is recommended to initiate a comprehensive research to examine the role of 'intrinsic values' in creating the 'motives from within' and developing the desired (I-N) and (O-N) fit relationships, as suggested by this study.

2. It might be quite useful to study the changes in engineering graduates' perceptions, orientations and trajectories over time, and understand the reasons underlying such changes, through a longitudinal/observational study, providing a 'video' rather than a 'snapshot'.

3. There seem to be a need to study and analyse the reasons underlying the phenomenon of switching from engineering to non-engineering professions among certain engineers, especially when the concern about this phenomenon seems to be evolving.

7.7 SUMMARY

The school to work transition of engineering graduates within the oil and gas industry is, as this study has demonstrated, a valid and significant concern, such is the scarcity of graduates in engineering professions on the one hand, and the vital importance of this industry in a Qatari context on the other.

Evidently, there are significant deficiencies in current education-industry cooperation forms and practice, as well as career education offered at the different stages of a student/graduate's career life; however, there is also an issue over the orientations and career preferences of the graduates themselves, which require policymakers to seek measures which deal with root causes rather than symptoms.

An effective education-industry partnership would help facilitate effective career education, and in turn allow for smooth entry into the labour market, higher levels of engagement with the working environment: and ultimately result in satisfied individuals providing high performance and productivity.

However, it is argued in this study that there is a pressing need to think of skill formation and human capacity building in a different manner, different than the traditional approach of investing more and more in education and training, and that is to say that there is a need to invest in creating 'motives from within', through the promotion of intrinsic values and accomplishment of individual-nation (I-N) fit and organization-nation (O-N) fit relationships, which is argued would make all components of a nation perform for its interests; rather than merely look after individual or organizational interests and requirements.

BIBLIOGRAPHY

Abduljawad H. (2011): *Organizational Knowledge*: Presentation at the 3rd Annual Managing Local Talents Conference, held in the period 18th – 20th September 2011, Doha-Qatar.

Al-Mansouri A. (2011): *Discussion on the Importance of Education-Industry Partnership in Facilitating Graduates' STWT and Career Development, and the Role of Qatar Career Fair* [Conversation] (Personal Communication, 13th October 2011), Director of Qatar Career Fair Center

Al-Mansoori M. (2010): *Qatarization: Beyond the numbers*: Presented on behalf of Msheireb Properties at the 2nd Annual Managing Local Talents Conference, held in the period 11th – 13th October 2010, Doha-Qatar.

Al Muftah H. (2010): *Current Initiatives for Nationalization – White or Black*: Presentation at the 2nd Annual Managing Local Talents Conference, held in the period 11th – 13th October 2010, Doha-Qatar.

Al Tukmachy S. (2012): *Bridging the Gender Gap in Oil and Gas*: An Interview with Saba Al Tukmachy, the Career Development Manager at ENOC, performed by Oil and Gas IQ at the Leaders of the Future Summit held in the period 1st to 4th April 2012, Abu Dhabi-UAE. (on-line), Available at:

http://www.leadingoilandgas.com

[Accessed on 1st June 2012]

Al-Yousef N. (2009): *The Status of Women in the Arab Gulf Countries*. Gulf

Cooperation Council (GCC)

Anakwe U.P., Hall J. C., Schor S. M. (2000): Knowledge-related skills and effective career management: *International Journal of Manpower*, Vol. 21 Iss: 7 pp. 566 – 579.

Anctil T., Smith C.K., Schenck P. and Dahir C. (2012): Professional School Counselors' Career Development Practices and Continuing Education Needs: *The Career Development Quarterly*, Vol. 60, pp. 109–121

Andrews J. and Higson H. (2008): Graduate Employability, Soft Skills Versus Hard Business Knowledge: A European Study, *Higher Education in Europe Journal,* Vol. 33 Iss: 4, pp. 411-422.

Ashton D. and Green F. (1996): *Education, Training and the Global Economy*. Cheltenham: Edward Elgar Publishing.

Beidas M.Y. (2009): *Can Adherence to Religious Teachings, Principles, Values, and Traditions Affect HRM Practices? (HRM Practices in Saudi Arabia as a Case Study):* Unpublished Doctorate Thesis), Leicester, Leicester University

Bernard, H. and Ryan, G. (2010) Analyzing Qualitative Data, Thousand Oaks: Sage.

Boeije, H. (2010) Analysis in Qualitative Research, London: Sage.

Brown P., Lauder H. and Ashton D. (2011): *The Global Auction: The Broken Promises of Education, Jobs and Incomes*. Oxford: Oxford University Press

Brown, D. (1990) 'Summary, comparison & critique of the major theories', in Brown, D., Brooks, L. & Associates (eds.), *Career Choice & Development*, San Francisco, Jossey Bass

Brown S. D. and Lent R. W. (2013): *Career Development and Counseling: Putting Theory and Research to Work*, 2nd ed. New Jersey: John Wiley and Sons Inc.

Bryman, A. (2001) Social Research Methods, New York: Oxford University Press.

Bryman, A. (2004) Social Research Methods, 2nd ed., New York: Oxford University Press.

Bryman A. (2008): *Social Research Methods*, 3rd ed., Oxford: Oxford University Press

Bunglawala Z. (2011): *Young, Educated and Dependent on the Public Sector: Meeting graduates' aspirations and diversifying employment in Qatar and the UAE*, Brookings Doha Center Analysis Paper Number 4, December 2011

BURNS, N & GROVE, SK. 1998: The practice of nursing research: Conduct, Critique and Utilization, 2nd edition, Philadelphia: Saunders

Business Dictionary.com (2013), (Online), Available at:
http://www.businessdictionary.com/definition/skill.html
[Accessed on 23rd December 2013]

Cranmer S. (2006): Enhancing graduate employability: best intentions and mixed outcomes: *Studies in Higher Education*, Vol. 31 Iss: 2, pp. 169-184

Creswell, J. W. (1994) Research Design: Qualitative and Quantitative Approaches, Thousand Oaks, CA: SAGE.

Cummings S.I. and Jecks N. (2004): *Skills Development and Productivity Through Social Dialogue*: International Labour Office and Asia Pacific Skill Development Programme 2004, Bangkok 10200, Thailand

Dafou E. (2009): Qualifications and Skills: The Organizational Perspective: *Journal of Education and Work*, Vol. 22 Iss: 2, pp. 91-104.

Davies P. (2006): The Sage Dictionary of Social Research Methods, California: Sage

Decter M.H. (2009): Comparative review of UK-USA industry-university relationships: *Education + Training Journal*, Vol. 51 Iss: 8 pp. 624 – 634

Denzin N. K. and Lincoln Y.S. (2005): *The Sage Handbook of Qualitative*

Research. 3rd ed. California: Sage Publications, Inc.

Denzin, N. K. and Lincoln, Y. S. (2008) Collecting and Interpreting Qualitative Materials, (3rd Edition), USA: Sage Publications.

Dobbins T., Plows E. and Lloyd-Williams H. (2014): Make do and mend' after redundancy at Anglesey Aluminium: Critiquing human capital approaches to Unemployment: *Work, Employment and Society Journal, Vol. 28(4) 515 – 532*

El Karkouri Wadii (2011): *Schlumberger –*: Presentation at the 1st Annual HR Best Practices in Oil, Gas and Petrochemicals Conference, held in the period 21st – 22nd November 2011, Kuwait.

El Rassi F. (2011): *Discussion on the Importance of Career Planning* [Conversation] (Personal Communication, 18th October 2011), Qatar Career Fair Center, Planning and Communication Manager.

Feldman D.C., Whitcomb K.M. (2005): The effects of framing vocational choices on young adults' sets of career options: *Career Development International,* Vol. 10, Iss: 1 pp. 7 – 25

Findlow S. (2000): *The United Arab Emirates: Nationalism and Arab-Islamic Identity.* The Emirates Occasional Papers (39), Abu Dhabi: The Emirates Center for Strategic Studies and Research (ECSSR).

Findlow S. (2008): Islam, modernity and education in the Arab States:

Intercultural Education, Vol.19 Iss: 4, pp. 337-352.

Finn J.A. (2005): *Getting a PhD: An action plan to help manage your research, your supervisor and your project*. Oxon: Routledge.

Garrouste C. and Loi M. (2011): *School-to-work transitions in Europe: Speed of Convergence to permanent employment*: European Commission - Joint Research Centre (EC-JRC) Institute for the Protection and Security of the Citizen (IPSC) Unit G.03 Econometrics and Applied Statistics (EAS)- Paper prepared for the DEHEMS Conference, Vienna, September 22-23, 2011.

General Secretariat for Development Planning (GSDP) (2008): *Qatar National Vision (QNV) 2030 Document*, July 2008, Doha-Qatar.

General Secretariat for Development Planning (GSDP) (2009): *Qatar National Vision (QNV) 2030 General Background*, December 2009, Doha-Qatar.

Gewirtz, S. and Cribb, A. (2006): What to do about values in social research: the case for ethical reflexivity in the sociology of education, British Journal of Sociology of Education, 27(02), pp. 141-155.

Ginzberg, E., Ginsburg, S.W., Axelrad, S., & Herma, J.L. (1951) *Occupational Choice: an approach to a general theory*, New York, Columbia University Press

Goodwin, J. and Horowitz, R. (2002) Introduction: The Methodological

Strengths and Dilemmas of Qualitative Sociology, Qualitative Sociology, 25(1):

pp. 33-47.

GulfTalent.com, (2011), *Recruiting Top Graduates in Saudi Arabia,* HR Survey

Report, (Online), Available at:

http://www.gulftalent.com/HRZone

 [Accessed on 5th October 2011]

Harris-Bowlsbey J. (2012): *Career Development Models*: A Workshop

Presented by KUDER Inc. (USA) At Qatar Career Fair 2012: Doha-Qatar 1st-

5th April 2012

International Energy Agency (IEA), (2011): *Oil Market Report*, (Online),

Available at:

http://www.iea.org/publications/oilmarketreport/

 [Accessed on 19th May 2011]

International Monetary Fund (IMF), (2012): *World Economic Outlook Database*,

(Online), Available at:

http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx

 [Accessed on 15th November 2012]

Institutional Research and Data Warehouse (IRDW) at Qatar University

(2011a): *Book of Trends (2009-2010),* Doha-Qatar

Institutional Research and Data Warehouse (IRDW) at Qatar University (2011b): *Fact Book (2009-2010),* Doha-Qatar

Institutional Research and Data Warehouse (IRDW) at Qatar University (2011c): *Historical Data for Qatar University Graduates (1976-1977 to 2009-2010)*, Doha-Qatar

Keep E. (2012): Youth Transitions, the Labour Market and Entry into Employment: Some Reflections and Questions: *SKOPE Research Paper* No. 108 May 2012; SKOPE, Cardiff University

Keller G. and Warrack B. (2003): *Statistics for Management and Economics*, 6th ed. California: Curt Hinrichs, Brooks/Cole-Thomas Learning.

Kelly A.P. (2011): *Social Research Methods,* University of London, London School of Economics and Political Science (LSE).

Kivinen O. (1997): Graduate Credentials in a Changing Labour Market: *Higher Education in Europe Journal*, Vol. 22 Iss: 4, pp. 443-455.

Lai E. (2011): Motivation: A Literature Review, *Pearson's Research Reports*

Lee, R. M. (1993) Doing Research on Sensitive Topics, London: Sage Publications Limited.

Lee S. (2007): Vroom's expectancy theory and the public library customer

motivation model, College of Information, Florida State University, Tallahassee, Florida, USA; Vol. 56, No. 9; P 788-796

Lynn University (2014): SOC-200 Research Methods in the Social Sciences: Exploratory Design, http://lynn-library.libguides.com/researchmethods; cited on 10th December 2014.

Mackertich A. (1974): Career Education: Education + Training Journal, Vol. 16, Iss: 4 pp. 110 – 112.

Martin J.C., Akande K., Falconer R.A. (2010): Innovations from the Halcrow-Cardiff University strategic collaboration: *Engineering, Construction and Architectural Management,* Vol. 17 Iss: 1 pp. 46 – 64

Mason G., Williams G. and Cranmer S. (2009): Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes? *Education Economics Journal*, Vol. 17, Iss: 1, pp. 1–30

Mason J. (2002) Qualitative Researching, (2nd Edition), London: Sage Publications.

Matsumoto M. and Elder S. (2010): *Characterizing the school-to-work transitions of young men and women: Evidence from the ILO School-to-work transition surveys*: Country Employment Policy Unit - Employment Policy Department – International Labour Organization (ILO) Geneva: 1 v.

(Employment Sector- Employment working Paper No.51).

Mauthner, N. S. & Doucet, A. (2003) Reflexive Accounts and Accounts of Reflexivity in Qualitative Data Analysis, Sociology, 37(3), pp. 413-431.

May T. (2011): *Social research: Issues, methods and process*
3rd ed. England and New York: Open University Press, McGraw-Hill Education

Miller, R.L. Acton, C. Fullerton, D.A. and Maltby, J. (2002) SPSS for Social Scientists, Hampshire and New York: Palgrave and Macmillan.

Mitchell, L.K. & Krumboltz, J.D. (1996) 'Krumboltz's learning theory of career choice and counseling', in Brown, D., Brooks, L. & Associates (eds.) Career Choice and Development (3rd Ed), San Francisco, California, Jossey Bass, pp223-280

Morris R. (2010): What enables professional women to continue to pursue their careers full-time and bring up children? (Unpublished Doctorate Thesis), Leicester, Leicester University

Nafukho F.M., Hairston N. and Brooks K. (2004): Human Capital Theory - Implications for Human Resource Development: *Human Resource Development International*, Vol. 7, Iss: 4, pp. 545-551.

National Guidance Research Forum (NGRF) (2014), (Online), Available at:

http://www.guidance-research.org

[Accessed on 2nd January 2014]

Nazli S. (2007): Career development in primary school children: *Career Development International*, Vol. 12, Iss: 5 pp. 446 – 462

Neumann B.R. and Banghart S. (2001): Industry-university 'consulternships': an implementation guide: *International Journal of Educational Management*, Vol. 15 Iss: 1 pp. 7 – 11

Newman, I. and Benz C.R. (1998) Qualitative–quantitative research methodology: Exploring the interactive continuum, Carbondale, Illinois: Southern Illinois, University Press.

O'Donnell D., Thomas N. Garavan T. & McCarthy A. (2001): Understanding the Irish VET System: Beyond Neoclassicism, *International Journal of Manpower*, Vol. 22, No. 5

Onwuegbuzie A.J., Leech N.L. and Collins K.M.T. (2010): Innovative Data Collection Strategies in Qualitative Research: *The Qualitative Report*, Vol.15 Iss: 3, pp. 696-726.

Osipow, S.H. & Fitzgerald, L.F. (1996) *Theories of Career Development*, 4th ed., Needham Heights, Massachusetts, Allyn & Bacon

Otala L. (1994): Industry-University Partnership: Implementing Lifelong

Learning: *Journal of European Industrial Training*, Vol. 18 Issue: 8, P. 13 – 18

Parijat P. and Bagga S. (2014), International Research Journal of Business and Management (IRJBM), Vol. VII, September - 2014 Issue – 9, P. 1-8

Pastore F. (2008): *School-to-work transitions in Mongolia*: Employment Sector, Country Employment Policy Unit - Employment Policy Department – International Labour Organization (ILO) Geneva:138 p. (Employment Sector- Employment working Paper No.14)

Phillips E.M. and Pugh D.S. (2010): *How to get a PhD: A handbook for students and their supervisors.* 5th ed. England: Open University Press.

Pitcher J. and Purcell K. (1998), Diverse Expectations and Access to Opportunities: Is there a graduate labour market? *Higher Education Quarterly*, 0951–5224 Vol. 52, Iss: 2, pp. 179-203

Pool L. D and Sewell P. (2007): The key to employability: developing a practical model of graduate employability: *Education + Training Journal* Vol. 49 Iss: 4, 2007 pp. 277-289.

Prendergast M. (2008): *Newcomers to Ireland: an evaluation of the challenges facing Irish organizations in the management of their multicultural workforces in terms of training and development.* (Unpublished Doctorate Thesis), Leicester, Leicester University

Pringle J. K. and Gold U.O'C. (1989): How Useful is Career Planning for Today's Managers? *Journal of Management Development*, Vol. 8 Iss: 3 pp. 21-26.

Qatar Career Fair (QCF) Official Website (2012), (Online), Available at: Available at: http://www.qatarcareerfair.com.qa/en/AboutQCF/QCF_Vision.aspx [Accessed on 11th May 2012]

Qatar Statistics Authority (QSA) (2010): *Results of the 2010 Census of Population, Housing and Establishments*, Doha-Qatar

Qatar Statistics Authority (QSA) (2011): *Qatar in Figures*, Issue 26, December 2011, Doha-Qatar

Qatar Statistics Authority (QSA) (2012): *Qatar Economic Statistics at a Glance*, Doha-Qatar.

Rehfuss M.C., Gambrell C.E. and Meyer D. (2012): Professional School Counselors' Perceived Person-Environment Fit and Career Satisfaction: *The Career Development Quarterly*, Vol. 60, pp. 145–151.

Research Guide at University of South California (USC): (2014), Available at: http://libguides.usc.edu/writingguide/researchdesignss [Accessed on 10th December 2014]

Silverman, D. (2006) Interpreting Qualitative Data, (3rd Edition), London: Sage

Publications Ltd.

Stebbins R. (2001): Exploratory Research in the Social Sciences, Sage University Papers Series on Qualitative Research Methods, Vol. 48, Thousand Oaks, California: Sage

Strauss, A. and Corbin, J. (1998) Basics of Qualitative Research, California: Sage

Sulaiman N.F. and AlMuftah H. (2010): A Qatari perspective on women in the engineering pipeline: an exploratory study: *European Journal of Engineering Education*, Vol. 35 Iss: 5, 2010 pp. 507-517.

Sentrico Competency Management Website (Sentrico) (2013), (Online), Available at:

http://www.sentricocompetencymanagement.com/page11405617.aspx

[Accessed on 25th December 2013]

Super, D. E. (1957): The Psychology of Careers, New York, Harper and Row.

Super, D.E., Tiedeman, D.V. & Borow, H. (1961): Vocational development: a symposium, *Personnel Guidance Journal*, Vol. 40, No.1. pp.11-15.

Super, D.E. (1990) A Life-Span, Life-Space Approach to Career Development in Brown, D. Brooks, L. & Associates, 2nd ed., *Career Choice and Development*, San Francisco: Jossey-Bass, pp.197-261.

Taylor-Powell E. and Renner M. (2003): *Analyzing Qualitative Data: Program*

Development and Evaluation, University Of Wisconsin-Extension, Madison, Wisconsin.

Tomlinson M. (2007): Graduate Employability and Student Attitudes and Orientations to the Labour Market. *Education and Work Journal*, Vol. 20, Iss: 4, pp. 285-304.

Trowler P. (2014): Doctoral Research Into Higher Education: *Making Theory Work,* Amazon Distribution, GmbH, Leipzig, Germany

Twomey D.F. (1991): An Industry/Education Partnership: *Competitiveness Review:* An International Business Journal incorporating *Journal of Global Competitiveness*, Vol. 1 Issue: 1, P. 5 – 7

Vroom, V.H. (1964), Work and Motivation, JohnWiley and Sons, New York, NY

Walsh D. (2007): *How can Workplace Learning Help to Reposition Ireland's Engineering Industry Towards a High Skills Route?* Unpublished Doctorate Thesis), Leicester, Leicester University

Warren, C. A. B., et al (2003) After the Interview, Qualitative Sociology, 26(1), pp. 93-110.

World Bank (WB) (2005): *Labour Market Strategy Project - A Labour Market Strategy for the State of Qatar.* (Main Report, Vol. 1, December 2005).

Xiao Jin (2001): *Determinants of salary growth in Shenzhen, China: An analysis of formal education, on-the-job training, and adult education with a three-level model.* Faculty of Education, The Chinese University of Hong Kong, Sha Tin, N.T. Hong Kong Special Administration Region, China

Yorke M. and Knight P. T., eds. (2006): Embedding Employability into the Curriculum: Learning and Employability-Series I. *The Higher Education Academy*, York, UK

Zamora B. (2006): *A New Discussion of the Human Capital Theory in the Methodology of scientific Research Programmes*, The International Symposium on Economic Theory, Policy and Application, August 21st – 23rd, Athens, Greece

APPENDICES

Appendix 1: Questionnaire 1.a - Heading Towards Engineering Studies - Distributed through Educators

ED.1 Heading towards Engineering Studies

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from Education to Labour Market.

The survey consists of 10 questions and would take you only few minutes to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

ED.1 Heading towards Engineering Studies

Perceptions about University, Engineering Field and Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the university, the engineering field and the labour market.

1. In which academic year did you start at the university? And what major?

2. What is your gender?

Female

Male

3. Why have you chosen Texsas A&M?

My teachers recommended to me

My parents recommended to me

My friends recommended to me

It has a good reputation

All of the above

Other (please specify)

4. Why have you decided to study engineering?

I like engineering

I had high GPA at high school

My parents encouraged me

My friends encouraged me

My teachers encouraged me

It is a promising field

All of the above

Other (please specify)

5. Have you received any academic advice while at the high school pertaining to your college studies?

Yes

No

If yes, have you found it to be useful?

6. While at the high school, has any major employer conducted awareness/introductory sessions for you and your colleagues?

Yes

No

If yes, which employer?

7. How useful was the annual Qatar Career Fair in helping you with the selection of your field of study?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

8. Do you perceive engineering graduates to have a promising labour market?
Yes

No

Not very sure

9. Have you decided on the industry you wish to be employed at? Yes

No

Not Sure Yet

10. Which industry might represent your preference for employment?

Oil & Gas

Railways

Other (please specify)

Next >>

Powered by SurveyMonkey

ED.1 Heading Towards Engineering Studies

Many Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Powered by SurveyMonkey

Appendix 2: Questionnaire 1.b - Heading Towards Engineering Studies - Distributed through Employers

LM.1 Heading towards Engineering Studies

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from Education to Labour Market

The survey consists of 10 questions and would take you few minutes to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

LM.1 Heading Towards Engineering Studies

Perceptions about University, Engineering Field and Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the university, the engineering field and the labour market.

1. At what university are you studying? In which academic year did you start at the university? And what major?

2. What is your gender?

Female

Male

3. Why have you chosen this university?

My teachers recommended to me

My parents recommended to me

My friends recommended to me

It has a good reputation

All of the above

Other (please specify)

4. Why have you decided to study engineering?

I like engineering

I had high GPA at high school

My parents encouraged me

My friends encouraged me

My teachers encouraged me

It is a promising field

All of the above

Other (please specify)

5. Have you received any academic advice while at the high school pertaining to your college studies?

Yes

No

If yes, have you found it to be useful?

6. While at the high school, has any major employer conducted awareness/introductory sessions for you and your colleagues?

Yes

No

If yes, which employer?

7. How useful was the annual Qatar Career Fair in helping you with the selection of your field of study?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

8. Do you perceive engineering graduates to have a promising labour market?

Yes

No

Not very sure

9. Have you decided on the industry you wish to be employed at?

Yes

No

Not Sure Yet

10. Which industry might represent your preference for employment?

Oil & Gas

Railways

Other (please specify)

Next >>

LM.1 Heading Towards Engineering Studies

Many Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Appendix 3: Questionnaire 2.a - Transition from Engineering Education to Labour Market - Distributed through Educators

ED.2 Transition from Engineering Education to Labour Market

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from University to Labour Market.

The survey consists of 10 questions and would take you few minutes only to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

ED.2 Transition from Engineering Education to Labour Market

Perceptions about University, Engineering Field and the Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the university, the engineering field and the labour market.

1. Which major are you studying and in what month & year do you expect to graduate?

2. What is your gender?

Female

Male

3. How effective was the teaching within your major at Texas A&M University?

Extremely effective

Very effective

Moderately effective

Slightly effective

Not at all effective

4. Have you attended any practical work-based training during your studies?

Yes

No

If yes, have you found it to be useful?

5. How useful was the on-campus career centre in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

6. How useful was the annual Qatar Career Fair in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

7. Do you perceive engineering graduates to have a promising labour market?

Yes

No

Not very sure

8. Have you decided on the industry you wish to be employed at?

Yes

No

Not Sure Yet

9. Which industry might represent your preference for employment?

Oil & Gas

Railways

Other (please specify)

10. Will you be attending graduate or professional school in the academic year immediately following graduation?

Yes

No

Next >>

ED.2 Transition from Engineering Education to Labour Market

Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Powered by SurveyMonkey

LM.2 Transition from Engineering Education to Oil and Gas Industry

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from University to Labour Market.

The survey consists of 10 questions and would take you few minutes only to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

LM.2 Transition from Engineering Education to Oil and Gas Industry

Perceptions about University, Engineering Field and the Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the university, the engineering field and the labour market.

1. At which university are you studying? Which major and in what month & year do you expect to graduate?

2. What is your gender?

Female

Male

3. How effective was the teaching within your major at this university?

Extremely effective

Very effective

Moderately effective

Slightly effective

Not at all effective

4. Have you attended any practical work-based training during your studies?

Yes

No

If yes, have you found it to be useful?

5. How useful was the on-campus career centre in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

6. How useful was the annual Qatar Career Fair in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

7. Do you perceive engineering graduates to have a promising labour market?

Yes

No

Not very sure

8. Have you decided on the industry you wish to be employed at?

Yes

No

Not Sure Yet

9. Which industry might represent your preference for employment?

Oil & Gas

Railways

Others

Not Sure Yet

10. Will you be attending graduate or professional school in the academic year immediately following graduation?

Yes

No

Next >>

LM.2 Transition from Engineering Education to Oil and Gas Industry

Many Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Powered by SurveyMonkey

Appendix 5: Questionnaire 3.a - Engineers at the Labour Market - Distributed through Educators

ED.3 Engineers at the Labour Market

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from University to Labour Market.

The survey consists of 12 questions and would take you few minutes only to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

ED.3 Engineers at the Labour Market

Perceptions about the Engineering Education and the Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the engineering education and the labour market.

1. In which major did you graduate and which year?

2. What is your gender?

Female

Male

3. How effective was the teaching within your major at Texas A&M University?

Extremely effective

Very effective

Moderately effective

Slightly effective

Not at all effective

4. Have you received any career guidance or advisory from the university prior to graduation?

Yes

No

5. How useful was the career guidance or advisory you received from the university prior to graduation?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

6. Does your university keep in touch with you and your graduated colleagues?

Yes

No

If yes, do you find this to be useful?

7. How useful was the annual Qatar Career Fair in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

8. How effective do you find the career guidance, training and development with your current organization?

Extremely effective

Very effective

Moderately effective

Slightly effective

Not at all effective

9. Do you perceive the engineers to have promising career opportunities?

Yes

No

Not very sure

10. In which industry are you currently employed?

Oil & Gas

Railways

Other (please specify)

11. Do you intend to maintain your employment with the current industry?

Yes

No

Not Sure Yet

If No, to which industry you might switch?

12. Do you intend to continue with technical or managerial career?

Technical

Managerial

Not Sure Yet

Next >>

ED.3 Engineers at the Labour Market

Many Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Powered by SurveyMonkey

LM.3 Engineers at Oil and Gas Industry

Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from University to Labour Market.

The survey consists of 11 questions and would take you few minutes only to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

LM.3 Engineers at Oil and Gas Industry

Perceptions about the Engineering Education and the Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the engineering education and the labour market.

1. From which university did you graduate? Which major and which year?

2. What is your gender?

Female

Male

3. How effective was the teaching within your major at that university?

Extremely effective

 Very effective

Moderately effective

Slightly effective

Not at all effective

4. Have you received any career guidance or advisory from the university prior to graduation?

Yes

No

5. How useful was the career guidance or advisory you received from the university prior to graduation?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

6. Does your university keep in touch with you and your graduated colleagues?

Yes

No

If yes, do you find this to be useful?

7. How useful was the annual Qatar Career Fair in helping you with your post-graduation plans?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

8. How effective do you find the career guidance, training and development with your current organization?

Extremely effective

Very effective

Moderately effective

Slightly effective

Not at all effective

9. Do you perceive the engineers to have promising career opportunities?

Yes

No

Not very sure

10. Do you intend to maintain your employment with the Oil and Gas industry?

Yes

No

Not Sure Yet

If No, to which industry you might switch?

11. Do you intend to continue with technical or managerial career?

Technical

Managerial

Not Sure Yet

Next >>

LM.3 Engineers at Oil and Gas Industry

Many Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Appendix 7: Questionnaire 4 - Heading Towards University

ED.4 Heading Towards University

 Welcome!!

Thanks for selecting to complete this survey, which forms part of a PhD research by Mohammad Abul-Ola at the University of Leicester - UK on the Engineering Graduates Transition from Education to Labour Market.

The survey consists of 10 questions and would take you only few minutes to complete.

All information being collected through this survey will be completely anonymous and shall be treated in strictest confidence and for the research purpose only.

Important Note: If you have previously completed a similar survey for the same researcher, kindly ignore this e-mail, with thanks.

Next >>

Powered by SurveyMonkey

ED.4 Heading Towards University

Perceptions about University, the Engineering Field and the Labour Market

In this survey, the researcher would appreciate learning about your perceptions about the university, the engineering field and the labour market.

1. At which grade at the high school are you and which stream?

2. What is your gender?

Female

Male

3. Why have you chosen the engineering stream?

    I like engineering

    I had a high GPA

    My teachers encouraged me

    My parents encouraged me

    My friends encouraged me

    It allows for more post-high school study options

    All of the above

    None of the above

4. Have you received any academic advice while at your school pertaining to engineering studies?

Yes

No

If yes, have you found it to be useful?

5. While at your high school, has any major employer conducted awareness/introductory sessions for you and your colleagues?

Yes

No

If yes, which employer?

6. How useful was the annual Qatar Career Fair in helping you with the selection of your current stream?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not at all useful

7. Do you perceive engineering studies to have a promising labour market?

Yes

No

Not very sure

8. Have you decided on the university/college that you would like to join after the high school?

Yes

No

Not Sure Yet

9. Have you decided on the industry you wish to be employed at?

Yes

No

Not Sure Yet

10. Which industry might represent your preference for employment?

Oil & Gas

Railways

 Other (please specify)

 Not yet sure

Next >>

ED.4 Heading Towards University

Thanks!!

Many thanks for completing this survey. Your kind participation would certainly add value to this research.

Should you have any queries pertaining to this survey, please feel free to contact the researcher:

Mohammad Abul-Ola

P.O. Box 0000

Doha - Qatar

Mobile Phone: 0000 e-mail <0000>

Submit response >>

Powered by SurveyMonkey

Appendix 8: Sample Questions Used for Semi-structured Interviews with Educators

Date: Time Start: Time Finish:

Name:

Title:

Institution:

1. What is the total number of students at your university?

2. How many students in the engineering majors are there?

3. Are there any career guidance programs for graduating students?

4. Do you have any collaboration arrangements with the high schools?

5. Do you have any collaboration arrangements with the labour market?

6. Do you have any communication channels with the regulatory bodies?

7. Do you have any communication channels with other non-governmental organizations such as Qatar Career Fair or Qatari Engineers Association (QSE)?

8. What arrangements does your institution have in place to prepare your graduates for the labour market? Are the specific requirements of the Oil & Gas industry or other labour market industries being considered?

9. What about the female engineering students/graduates, are there any other specific arrangements?

10. In your opinion, what could encourage Qatari female towards the engineering disciplines?

11. Are you maintaining any connection with the graduated students?

12. Do you have any means in place to receive your ex-students feedback after graduation?

13. How do you foresee hosting the 2022 World Cup to affect the transition process of graduating engineers?

14. What would you recommend to have the transition process smoother and more effective?

Appendix 9: Sample Questions Used for Semi-structured Interviews with Employers

Date: Time Start: Time Finish:

Name:

Title:

Organization:

1. What is the total number of Staff at your organization?

2. How many Qatari engineers are there? What about the female Qatari engineers?

3. Is there any training & development Plans/Programs for fresh engineers?

4. What about the female engineers, are there any specific different arrangements or considerations?

5. What are the concerns from the management perspective with regard to fresh engineers' transition and engagement with the work environment?

6. In your opinion, what could encourage Qatari female towards engineering and towards the Oil & Gas industry up-on graduation?

7. Do you have any collaboration arrangements with the universities?

8. What about the high schools? Are there any collaboration arrangements?

9. Do you have any communication channels with regulatory bodies?

10. Do you have any communication channels with other non-governmental organizations such as Qatar Career Fair or Qatari Engineers Association (QSE)?

11. Do you perceive your organization to be attractive for fresh engineers?

12. How do you foresee hosting the 2022 World Cup to affect the transition process of graduating engineers?

13. What would you recommend to have the transition process smoother and more effective?

Appendix 10: Sample Questions Used for Semi-structured Interviews with Government Authorities and Other Concerned Parties

Date: Time Start: Time Finish:

Name:

Title:

Organization:

1. What are the main roles your organization is having towards to university graduates?

2. Is there any training & development Plans/Programs for fresh engineers?

3. What are the concerns from your organization perspective with regard to graduates' school-to-work transition in general, and the engineering graduates in particular?

4. What are the concerns, if any, from the fresh engineers' perspective?

5. What might be the obstacles for female engineers? And what might be done about it?

6. Do you have any communication channels with universities?

7. Do you have any communication channels with the major employers?

8. Do you have any communication channels with other non-governmental organizations such as Qatar Career Fair or Qatari Engineers Association (QSE)?

9. How do you foresee hosting the 2022 World Cup to affect the transition process of graduating engineers?

10. What would you recommend to have the transition process more smooth and effective?

Appendix 11: Sample Questions Used for Structured Interviews with Transitioned Engineers within the Oil & Gas Industry

Date: Time Start: Time Finish:

Name: Gender:

Title:

Organization:

1. When have you graduated? In which major and from which university?

2. Since when you have joined this organization?

3. Does your organization provide any training & development Plans/Programs for fresh engineers?

4. Have you received any career advisory/orientation while you were at university? And how useful you found it?

5. Do you believe that the teaching at your university was relevant and effective to what you're doing now?

6. Do you maintain any communication channels with your university?

7. How do you find Qatar Career Fair initiatives & programs with regard to your career plans?

8. In your opinion, what are the difficulties the engineering graduates face in their transition from school-to-work?

9. What do you suggest for improving the school-to-work transition of engineers?

10. What reasons made you select the Oil & Gas industry?

11. Do you intend to sustain your employment within the Oil & Gas industry?

Appendix 12: Sample Questions Used for Structured Interviews with High Schools Academic Advisors

Date: Time Start: Time Finish:

Name:

Title:

High School:

12. How many students are there in this school? How many students within the scientific stream?

13. How many Academic Advisors are there?

14. Are there any specific qualifications for Academic Advisors at high schools?

15. What activities and programs does your school have for providing academic advice or career guidance?

16. Do you maintain any communication channels with the universities, labour market?

17. What arrangements do you have in place to prepare your students for the higher education stage?

18. Do you have any specific arrangements in place to prepare your students for specific sectors in the labour market? What if we take the Oil & Gas industry as an example?

19. How do you find Qatar Career Fair initiatives & programs with regard to your academic advisory activities?

20. What do you suggest for improving the school-to-work transition of engineers?

Appendix 13: Focus Group Questions, Themes and Discussion Points

Date: Time Start: Time Finish:

The strategic and thematic objectives of the Focus Groups are as follows:

- To discuss the key issues, concerns, expectations, barriers, challenges and opportunities in existing career guidance and workforce development practices in Qatar;

- To discuss how best to develop/integrate policies for career guidance in the education, training and employment sectors;

- To discuss how best to ensure Qatar has effective school-to-work transition policies, programs, regulations and frameworks to help ensure Qatar – and its youth – fully utilize their increasing human capital resource, meet the growing demand of Qatar's diverse labour market and economy, and the aspirations of Qatar's youth.

- To identify what more needs to be done with regards to capacity building, to move towards a national career guidance and workforce development culture and community of stakeholders, including policies, frameworks, procedures, guidelines.

- To discuss on how to enhance 'motives from within' among students and graduates

The strategic objectives and below sub-themes should be used to guide Focus Group discussions:

a. Investment in career guidance: Why should it matter to policy and decision makers?

b. Integrated career guidance policies: Creating systems that work.

c. The roles of motives in national capacity building

Questions, Themes and Discussion Points – Referring to the Strategic and Thematic Objectives

- What careers information/services do young Qataris need? Are they currently receiving these services?

- Are there good examples of social media use to raise careers awareness?

- Are there credible examples of career development practices in schools, universities and public/private employers which can be adapted or expanded across Qatar?

- What more needs to be done to meet careers skills building needs – to help prepare youth for the labour market and meet the needs of the economy?

- Should parents – whom have an influencing role in the education and employment decisions of their children – also be engaged here?

- How can we enhance 'motives from within' among students and graduates?

- Would a Principle-based Career Education seem to be a good idea?

Appendix 14: Introductory E-mail for Arranging Interview

Sub: PhD Research on the Role of Education-Industry Partnership in Facilitating the Engineering Graduates' School-to-Work Transition

Dear 000. 00000000,

It was pleasure talking to your good-self this afternoon and would highly appreciate if you could spare some of your valued time for a short meeting as I would like to address your kind views with regard to the education-industry partnership and how it can facilitate the engineering graduates transition from university to the local labour market, as I'm quite confident that your views would be of high value to the PhD research I'm currently performing, with the title " How Can the Education-Industry Partnership Facilitate the Engineering Graduates' School-to-Work Transition?: A Qatari Perspective of the Oil & Gas Industry"

Your kind confirmation would be highly appreciated.

Best Regards,

Mohammad Abul - Ola

Appendix 15: Sample Interview Summary

PhD Research on the Role of Education-Industry Partnership in Facilitating the Engineering Graduates' School-to-Work Transition

INTERVIEW SUMMARY

Date: 1st June 2011   Time Start: 9:00 a.m.   Time Finish: 10:00 a.m.

Name: 000   Code: 000

Title: 00000

Organization: 000

Q1. What is the total number of Staff at your organization? And how many engineers are there? Where from the Qatari Engineers received their engineering degrees?

A1: 00000 has a total workforce of 3,000 employees, out of which approximately 700 are engineers. For the Qatari Engineers, approximately 60% are graduating from local universities and the remaining from abroad.

Q2. Is there any training & development Plans/Programs for fresh engineers?

A2: At 0000, there's a comprehensive People Master Plan (PMP), under which there are several sub-plans that deal with the employee at 0000, including the "Under-development Engineers". There are in fact two main aspects for these engineers:

1. Professional Development Plan: This is being created at the individual level for each UD engineer and gets approved by the manager, supervisor and employee.

2. Mentor: For each UD engineer, a mentor is assigned. Recently, a clear definition of the qualifications/competencies required for the mentor has been set. Mentors are also given the incentive and encouragement to deliver.

The PMP considers two main aspects to enhance the end results of the development plans/programs:

From the training perspective, it considers the 80: 10: 10 approach, where 80% of the training the candidate is receiving would be Job Training, 10% through mentoring and 10% through external training.

The other aspect is the "Individual Responsibility", where the company makes it clear for the individual that the company will give a systematic and comprehensive support to the UD employee, however, the responsibility for making use and capitalizing on this support remains the employee responsibility in order to establish a sense of responsibility among the employees.

Q3. What are the concerns/challenges from the management perspective with regard to the fresh engineers' transition?

A3: The cultural aspect could be one of the most challenging aspects in the transition process of the fresh engineers, as some of them tend to take the short-cut in their career development instead of giving it what it takes. Lot of them pay great attention for the "job title" and the "package" that can be a challenging element against the "real development" of a fresh engineer.

The market circumstances and economics sometime do add another challenge by facilitating the above, such as the market boom took place in the period between 2003-2008, resulting in young engineers quitting their stable jobs and attracted towards higher positions/packages, without realizing the real competencies required for such jobs sometimes.

One more natural challenge could be the non-national mentor "reluctance" to exert his best and give it with "passion" being afraid of the "job loss". This gap has been identified and overcome by linking the mentoring activity to the overall performance appraisal and by appreciating the "performing mentors" and providing them with a higher level of job security.

Q4. How many years approximately it takes for a fresh engineer to become competent?

A4: It certainly varies from one engineer to another as well as the field of speciality; however, 2-3 years would normally be required.

Q5. Do you have any communication channels/cooperation aspects with universities?

A5: We have channels with 000, however, the relation with 000 is more consistent and mature compared to the relation with 000, which tends to take the form of Ad hoc.

The cooperation aspects are mainly: Scholarships, training, recruitment and consultation.

Q6. Do you have any communication channels with regulatory bodies, or other non-governmental bodies etc.?

A6: Yes, we do have, but these are normally related to national policies and guidelines, although you will find the Oil & Gas sector in general tends to be well ahead when it comes to tallying with the National Development Strategies, Qatarization is a good example.

Q7. Do you have any communication channels with other non-governmental bodies such as Qatar Career Fair or the Qatari Society of Engineers?

A7: Yes, we do cooperate with them. For example we participate with QCF in the annual fair and other relevant programs or events. For the QSE, we normally coordinate for certain training topics.

Q8. Do you perceive your organization to be attractive for fresh engineers?

A8: It is certainly an attractive organization for those who are willing to take their own development seriously and to give it what it takes; meanwhile, identifying the gaps and the continual improvement is an ever-ending priority for us.

Q9. How do you foresee hosting the 2022 World Cup to affect the transition process of graduating engineers?

A9: As mentioned earlier, the market boom can add another challenge by facilitating the young engineers quitting their stable jobs and attracted towards higher positions/packages, without realizing the real competencies required for such jobs and perhaps encouraging those engineers to take it the easier way (but not necessary the more appropriate)!!

Q10. What would you recommend to have the transition process more smooth and effective?

A10: The different parties would have different roles to make the transition process more smooth and effective:

For local Universities: it requires better understanding of the market requirements for matching the education process outputs with these requirements. More effective communication with the market key players would certainly help.

For Employers: To invest time & effort in the young engineers and provide all the necessary support through a systematic approach and defined plans. Also to continuously identify the gaps and have the continual improvement as an ever-ending process.

For Young Engineers: To have the willing to take their own career development seriously and have the patience to give it what it takes to achieve their career ambitions.

****

Appendix 16: E-mail for Obtaining Concurrence on Interview Summary

Sub: INTERVIEW SUMMARY: PhD Research on the Role of Education-Industry Partnership in Facilitating the Engineering Graduates' School-to-Work Transition

Dear 000

I have prepared the attached summary of our interview pertaining to the PhD research and would appreciate if you could have a look on it.

Kindly let me know should you have any comments/observations on this briefing.

Appreciating your kind support and cooperation

Best Regards,

Mohammad Abul - Ola

Appendix 17: Distributing Questionnaires to Engineering Students through Employers

Subject: Survey Links - PhD Research on the Role of Education-Industry Partnership in Facilitating the Engineering Graduates' School-to-Work Transition

Dear 000,

Allow me first of all to thank you for the great meeting of the last week and for all the valuable information you have provided.

I would further be grateful if the following survey links could be communicated to potential Qatari team members at your esteemed organization, as might be applicable:

1. The following link is intended for the early-stage engineering students, typically the 1st year:

https://www.surveymonkey.com/s/LM_1

2. The following link is intended for the final-stage engineering students, typically the 4th or 5th year:

 https://www.surveymonkey.com/s/LM_2

3. The following link is intended for the fresh engineers at work, typically the 1st or 2nd year within the labour market:

https://www.surveymonkey.com/s/LM_3

Note: The questionnaires are designed in such a manner that would not take more than 10 minutes to complete.

I would be truly grateful for your kind support in this regard.

Kind Regards,

Mohammad Abul - Ola

Appendix 18: Distributing Questionnaires to Engineering Students through Educators

Subject: Survey Links - PhD Research on the Role of Education-Industry Partnership in Facilitating the Engineering Graduates' School-to-Work Transition

Dear Dr. 000

Allow me first of all to thank you for the great meeting of the last week and for all the valuable information you have provided.

I would further be grateful if the following survey links could be communicated to potential Qatari engineering students/graduates at your esteemed university, as might be applicable:

1. The following link is intended for the early-stage engineering students, typically the 1st year:

https://www.surveymonkey.com/s/EDU_1

2. The following link is intended for the final stages engineering students, typically the 4th or 5th year:

https://www.surveymonkey.com/s/EDU_2

3. The following link is intended for the fresh engineers at work, typically the 1st or 2nd year within the labour market:

https://www.surveymonkey.com/s/EDU_3

Note: The questionnaires are designed in such a manner that would not take more than 10 minutes to complete.

I would be truly grateful for your kind support in this regard.

Kind Regards,

Mohammad Abul – Ola