
A case study investigation into success and failure in Foundation Year Medical School in a Middle Eastern transnational context.

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Declaration

I Caroline Holden confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This study utilises Tinto's (1993) theoretical framework, known as the Model of Longitudinal Departure, to investigate success and failure in Foundation Year medical school in a Middle Eastern transnational location, through considering student background, cultural influence and academic transition. This case study is framed within a social constructivist epistemology utilising mixed methods, including quantitative pre-entry and academic attainment data, and qualitative student and staff interview data.

Lack of contextual research combined with high failure rates, which negatively impact on students, institutions, sponsors and governments in this transnational first-year medical school experience, have led to the need to better understand the first-year medical school experience in this Bahraini context. The research questions investigate the student and staff perspectives of academic success and failure, together with the role of previous learning and the resulting implications for programme design.

The research constructs a notion termed the 'state of realisation', this is the point at which students recognise and implement learning strategies associated with third level learning success. Additional findings include that English language competency measured by the IELTS and previous educational experience and achievement are pre-indicators of academic success. Within this transnational context culture is found to contextualize, frame and influence the students. Academic integration is found to be multi-faceted and complex, whereas social integration appears to be less challenging, seemingly facilitated by a strong culture of belonging. The research refines Tinto's 1993 model into an appropriate framework for this transnational setting named the Model of Academic Success and Failure in a Transnational Context. It is within this framework that the constructed notion of the 'state of realisation' is situated. Findings on gender and academic success are unexpected, showing that males performed better than females in Foundation Year medical school in this transnational context. Further research is recommended to investigate this aspect in-depth.

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Reflective Statement

This reflection considers the development path of knowledge, skills and professional practice that I have followed since starting the EdD in October 2010, to the final stages in October 2014. It considers the four foundation modules and how the learning gained through these has created the basis of knowledge, which was then extended in the IFS and thesis stages.

Throughout this four year journey the way I view knowledge and the degree to which I question it has changed. In essence the EdD has had a fundamental impact on how I approach both academic and professional aspects of my life; it has moved me part way along what Johns (1999) describes as the scale from novice to expert.

Foundations of Professionalism in Education - A Reflection on Professional Understanding from a Critical Incident

Understanding the concept of professionalism has created the foundations for the elements which followed in the EdD. It marked the step from master's level learning and thinking, towards doctorate level learning and conceptualisations and in doing so challenged previously held thoughts on professionalism.

My focus in this module was on a personal professional critical moment which focused around the identification of the concept of 'parrhesia', (Peters, 2003) which is speaking out from a position of inferiority. This enabled greater personal understanding of a core element of my character, which continues to shape my professional career. Through this module I have come to better understand the connection between my professional life and my moral and ethical compass. Additional key themes which extended my understanding from this module are those of democratic practice and uncertainty. All these aspects are pertinent to my geographical location, as being situated in the Middle East my professional life is impacted and challenged by rapidly

changing events. My perceptions continue to alter and develop and my understanding deepens in the face of this shifting landscape. Uncertainty is a fundamental element in my professional world, shaped by contemporary economics, governmental policies, political influences and the additional complexity of the contemporary Higher Education landscape and what Hargreaves & Goodson (1996p3) term 'reprofessionalization', which is the broadening of roles and extension of responsibility, combined with 'deprofessionalization' of reduced autonomy and increased accountability.

Methods of Enquiry 1 - Action Research: Investigating student success on a Medical Pre-Foundation Programme using both 'hard' and 'soft' learning outcomes.

This second module marked the first of my assignments which focused on my developing research interest, which is success and failure in first-year learning at a transnational medical school. The learning I experienced through this module laid the foundations for the later IFS and thesis stages of my EdD. The academic vulnerability and lack of compass that some students' exhibit in this transitional stage, together with the impact of previous learning experience (Tinto, 1993; Zepke & Leach, 2010; Pittaway & Moss, 2006; Zimitat, 2004; Krift, 2004; O'Neill et al., 2011; McInnis, 2004), can shape this first-year experience of Higher Education and result in the need for scaffolded and supported learning interventions.

This assignment applied an action research design, which situated myself as the researcher, together with the students, at the heart of a cyclical research process. This positioning is representational of an ongoing and developing interest in democratic practice that emerges throughout my time on the EdD.

In terms of research methods, this assignment was my introduction to applying mixed methods; again this laid a foundation that continues throughout later research. The utilisation of both quantitative and qualitative research methods developed to reflect my need to investigate through a

combination of quantitative data and the richer insights which can only be gained through accessing the student narrative.

International Education - Internationalisation: The growth in off-shore campuses in the Persian Gulf region.

In this module I focused on the themes of internationalisation and off-shore transnational education and discovered the multi-dimensional aspects of the social/cultural, political, academic and economic influences, (de Wit, 1995, Knight & de Wit, 1997, 1999) which guide international education. The result of the erosion of time and space as consequences of internationalisation is the realisation that Higher Education needs to respond to this shifting landscape through entrepreneurialism such as the establishing of transnational campuses, (Shattock & Temple, 2006). The rapid expansion of transnational education is therefore framed within a neo-liberal paradigm.

A further aspect I considered in this assignment is the process of democratisation in the Middle East and the role that education plays at the very heart of this concept, (Barber, 2005). Through this module I realised that education is moving towards a 'global education' with transnational campuses situated at the very heart. I understood therefore that in my professional role I am an integral part of what Egron-Polak & Hudson (2011,p.1) claim is 'the most pervasive agent of change in Higher Education today'.

Methods of Enquiry 2 - Identifying Themes of Student Perceptions of Success on a Pre-Foundation Medical Programme through Focus Groups

This module drew together the core components of what developed into my IFS and was then further refined into aspects of my thesis. In this module I applied thematic analysis to focus group data gathered from Medical Commencement Programme students which considered student academic success set against transition, institutional responsibility and student learning background. Through utilising focus groups as a data collection method I

understood the ethical implications and the procedural approach necessary to directly access the student voice. Vincent Tinto emerges from this assignment as an author of key interest and the later IFS and thesis draw on his theories in greater depth.

The Role of Feedback

Following submission of the assignments I have received feedback at the draft and final stages of submission and this has been a useful tool in guiding my development in the structuring, detailing and content of my assignments. The knowledge gained from feedback has been cyclical in nature, with learning from one assignment leading to application in the next. Specifically, feedback has guided me to become more explicit and avoid implicit assumption, to create stronger internal threads to integrate conceptualisations and professional practice and to formulate and answer research questions.

IFS: Investigating student and institutional perspectives of success on a transnational pre-medical programme through exploring hard and soft outcomes, the influence of previous learning experience and transitional challenge.

The IFS draws together the elements of transnational education and success and failure in the transition of learning from secondary school towards a first year pre-medical programme of learning at medical school. It considered both the academic achievement of the students and also their perceptions regarding success, transition, preparedness and previous learning experience. Through conducting this research I learned and built on many aspects which informed my thesis.

Failure to implement a following cycle in the action research model which was applied in the IFS, led to greater understanding and to my following a case study social constructivist methodology in my thesis. Additionally, retrospective analyses of the IFS and Methods of Enquiry 2 revealed the failure to apply a conceptual framework to guide the thematic analysis of the

data. This was rectified in the thesis stage by applying Braun & Clarke's six stage thematic analyses, (2006).

Although similarities exist between my IFS and thesis, I feel that the key role of the IFS in developmental terms was to gain greater understanding of aspects of the research process, which was then applied to achieve a more cohesive and coherent model to my thesis. The IFS proved to be a highly effective learning process for me that suitably prepared me to embark on the thesis stage.

Thesis: A case study investigation into success and failure in Foundation Year Medical School in a Middle Eastern transnational context.

The thesis is the culmination of the learning experience of the previous years at IOE, which draws together the elements that have developed over the previous assignments and the IFS. Previously explored areas relating to student academic success and failure in first-year medical school through consideration of student background, cultural influence and academic transition are brought together, combined and refined in the thesis. These are namely the development of Vincent Tinto from being a notable author in previous assignments to becoming a key component of the thesis through the utilisation of Tinto's (1993) theoretical framework known as the Longitudinal Model of Departure. Through the application of this theoretical framework, findings from the thesis result in the development of the constructed Model of Academic Success and Failure in a Transnational Context. The research constructs a notion termed the 'state of realisation', this is the point at which students recognise and implement learning strategies that are associated with third level learning success.

The thesis identifies my epistemological and ontological stance as being social constructivist in nature, with the world being indefinite in nature and knowledge being defined by an individual's construction and interpretation of it. Knowledge from my perspective is therefore fluid and personal in nature. I

have developed into being an advocate of mixed methods research, believing that a multi-dimensional picture can emerge through the collection and analysis of both quantitative and qualitative data. Despite this recognition, my research is primarily driven by qualitative research methods, as I believe that this technique provides the richness of data that aligns with my epistemological and ontological beliefs.

Culture is the framing element that binds the academic aspect of this study with the situational aspects of the Middle Eastern location. Analysing academic success and failure in this context has informed me about the multi-faceted and complex nature of this concept. The backdrop for the thesis is the complexity of the Middle Eastern environment, which despite high levels of uncertainty following the 2011 Arab Spring is experiencing continued expansion in transnational education activities. This expansion is framed against the market driven neo-liberal framework of contemporary higher education.

Having gained much greater insights into my professional challenges and the temporal and spatial aspects in which I operate, my next challenge is to apply and extend the knowledge I have gained through the EdD into my future professional activities.

The Present and Future

Reflection must turn into action, (Guile & Lucas, 1999) and my identified way forward is to build on and apply my growing knowledge. I have been experiencing an on-going path of development in my professional role throughout the EdD, which has provided a two-way supportive and developmental communication between my academic studies and my professional development. Recent additions to my professional activities include becoming the chairperson of the Appeals Committee and a member of the Professional Conduct Committee; in both these roles the knowledge fields of internationalisation, cultural and political impact on learning and behavior, as well as insights into my own ethical viewpoints, are very much applied.

I would like to further develop and present my research on academic transition through concentrating on the constructed concept of the 'state of realisation' to better understand the complexities, and student journey that students encounter on reaching this state within the Middle Eastern context. Additionally, findings from the thesis regarding gender and success are unexpected, showing that males performed better than females in Foundation Year medical school in this transnational context, this is an aspect that warrants further research.

From a personal perspective, the knowledge and professional development I have experienced over the past four years must be applied to achieve the most effective outcomes. I have a strong sense of responsibility to ensure that this occurs. To this end as I move towards the end of my EdD, I am considering what the future may hold. From a professional viewpoint I would like to move from my middle management position to one of higher management where I can achieve wider impact in terms of the management, development and experience of transnational third level education, whilst ensuring that the voices of the students are clearly heard in the shifting landscape of the Middle East.

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Chapter One

Introduction to the Study

1.1. Purpose of the Research

This research aims to investigate the phenomenon of success and failure in a Foundation Year medical school programme, set against the transitional challenges that students and third level institutions face at the interface between secondary school and third level education. The context of this research is the Middle Eastern Arab Gulf region and specifically the focus is on an Irish transnational medical school in Bahrain. There is a tendency in research to regard transnational students as homogeneous (Dunn & Wallace, 2006a), but it is the purpose of this research to look at the individual factors that might impact individual academic performance in this Bahraini transnational location. The research study considers student data (age; gender; nationality; interview score) previous learning and language experience, and transitional challenge. It aims to investigate factors which may influence performance in Foundation Year medical school and ultimately impact on entry criteria; programme design and student support interventions, as well as inform the wider context of the first-year transnational medical school experience in the Gulf region and beyond.

For the purposes of this research, the focus will be on students who have academically failed in Foundation Year medical school, which form a part of what in the literature, are referred to as involuntary dropout (Brunsdan et al., 2000). This focus is housed within the theoretical framework of Tinto's Model of Longitudinal Departure (Tinto, 1993). Tinto's model has been supported by substantial empirical support within traditional settings (Lenning et al., 1980), and also within less traditional institutions (Pascarella et al., 1981; Pascarella & Chapman, 1983). However, throughout the literature there is no evidence to support that Tinto's model has been applied within the transnational context, nor within a medical school environment. The emphasis that Tinto's model places on the transitional challenge of integration between the individual

student and the institutional environment has not been previously tested in the transnational setting and given the vagaries of the transnational context, a strong argument exists to apply Tinto's principles to further understand the phenomenon of failure.

The commencement of medical school marks the start of a demanding time for students. Multiple stressors, including social, academic and emotional are navigated successfully by many students, but other students are less able to deal with the transition into this complex new life and fail to achieve academic success. Student failure and attrition result in wide ranging detrimental costs (Mahoney, 2014), not only to the student concerned, but to the institutional reputation, income stream and to other stakeholders including sponsoring bodies, parents and communities. In addition, the effects of failure can have an unexpected long-term impact; a study by Yates & James (2010) showed that poorly performing students in the early years of medical school may be at an increased risk of subsequent medical misconduct.

Awareness of potential predictors and causative factors of academic success and failure are important for medical schools striving to ensure high completion rates and to implement support mechanisms for inadequately performing students. Whilst insufficient research currently exists into failure and predictors of academic success, (Kruzicevic et al., 2012) the findings from such research, if acted upon, can yield long-term benefits for students, medical schools and their stakeholders.

1.2. The Research Problem and Questions

Lack of research in the Middle Eastern transnational context means that students, such as the first-year medical cohorts at RCSI Bahrain, are little understood. Insufficient is known about their critical first-year experience and the factors which may impact academic success; academic success is stated as meeting the 50% pass criteria in all twelve Foundation Year modules, and academic failure as not attaining the 50% pass criteria in all twelve modules. The extent to which academic and social integration factors impact on the

transnational first-year medical student is unknown, as are the interventions which could be developed to help support their learning. With the aim of gaining understanding of these factors through listening to the student and staff narratives and by investigating student pre-entry data the following research questions have been formed:

Question 1

How do previous learning context and achievement, English language ability, and student data* correlate with academic performance in Foundation Year Medical School?

*Age / gender / nationality / secondary school GPA / secondary school curriculum / English level / interview score

Question 2

What is the student perspective of reasons for success and failure in Foundation Year Medical School?

Sub-question 2.a

What is the academic staff perspective of reasons for success and failure in Foundation Year Medical School?

Question 3

What factors influence student academic transition in Foundation Year Medical School?

Question 4

What are the implications for programme design, student support and entry criteria of these findings?

1.3. Background

The Royal College of Surgeons in Ireland, (RCSI) Bahrain, was established in 2004 as a constituent university of RCSI Dublin to provide quality healthcare education to the Gulf region and beyond. RCSI Bahrain has in excess of one thousand, two-hundred students who come from thirty-six countries. The School of Medicine follows a traditional curriculum, with content being delivered through didactic lectures supported by tutorials, laboratories and in later years in the clinical setting. The School of Medicine comprises three different entrance points: five years of study for those entering in Junior Cycle;

six years of study for those entering in Foundation Year; seven years of study for those entering in the Medical Commencement Programme. Foundation Year, which in this study is defined as a first-year in medical school, provides the focus of this research. The Foundation Year in RCSI Bahrain delivers the same curriculum as RCSI Dublin and is assessed identically. The Foundation Year programme has been designed to provide a base of knowledge in the sciences, laboratory skills and professionalism, along with English language for those students who require this. The science content in the Foundation Year is taught in individual modules and also in an integrated fashion around the core themes of systems within the human body. Foundation Year in RCSI Bahrain experiences 40-50% failure in first sitting examinations and a 20-26% failure in repeat examinations. Students who fail both the first and repeat sittings of Foundation Year have the opportunity to repeat the year and approximately one third of these students (9%) do so. The attrition rate is therefore approximately 17%, almost all of which is due to academic failure. This failure rate is higher than approximations of rates in first-year medical school discussed in the literature. Other studies have presented differences in the magnitude of attrition rates in relation to the UK, varying from 7% to 13%, (Parkhouse, 1996), while Arampulam et al., (2004b) talk about a rate of 3.8% in United Kingdom medical schools in the period 1980-1992.

1.4. Research Rationale

Although the phenomenon of transnational education has undergone rapid expansion in the last decade, with one third of over the one hundred branch campuses operating in the world being located in the Arab region (OBHE, 2005b), little research has been done to accompany and explore the impact of these developments (Wilkins et al., 2012).

The Bologna Framework has started to address the portability and transferability of university and vocational qualifications across national borders (Erl, 2006; Erl & Yu, 2009; Phillips & Erl, 2003). However, Irish medical schools and those from many other countries are not fully compliant with the Bologna Framework (Croke, 2011). In terms of learning outcomes,

module outcomes and credit, they follow Bologna recommendations, but the educational cycles and levels within the medical school programme design do not align with the Bologna Framework. This indicates that the notion of global mobility across medical education is impeded and there is no clear mapping of the cyclical medical school model to the Bologna Framework.

As part of an internal Bahraini push to improve quality and as part of its 2030 strategy, Bahrain has introduced its own National Qualifications Framework which is based upon the twelve-level Scottish Qualifications Framework. This recent introduction has helped to standardise and increase the transferability of qualifications within Bahrain. Additionally, 2014 will mark the rolling out of the Higher Education Academy's professional framework which aims to increase standards for professional development at Higher Education institutes.

There are many aspects of the transnational education setting which are under-researched; most educational research has been conducted in the United Kingdom, Europe and North America and very little research exists for the Middle Eastern region, despite the great increase in transnational operations in recent years. Within a wide research gap in transnational education, medical education research as a wider field is viewed as progressing little in the last decade. It is described as lacking methodological rigour, funding and longitudinal research aspects, (Todres et al., 2007). Set against this is the need to provide greater levels of quality assurance, with regard to the student learning experience and the impact of previous learning experiences. Transition of students from secondary level to third level education is widely acknowledged to be a challenging period in a student's educational journey (Dutton et al., 2010). However, the additional challenge of this experience in medical school from a non-western curriculum model delivered through Arabic and situated within a transnational context requires greater understanding, which can only be gained by research, in order to guide programme design, provide greater levels of support; and inform the admissions criteria process to ultimately facilitate greater levels of success.

Chapter Two

Literature Review

2.1. Introduction to Chapter Two

The following literature review looks at three key areas in relation to this research. These are student transition from secondary school to higher education; transnational education in the Middle Eastern context; and success and failure in first-year medical school. These elements are framed against Tinto's (1993) theoretical framework known as the Model of Longitudinal Departure to create a paradigm in which to ground this research.

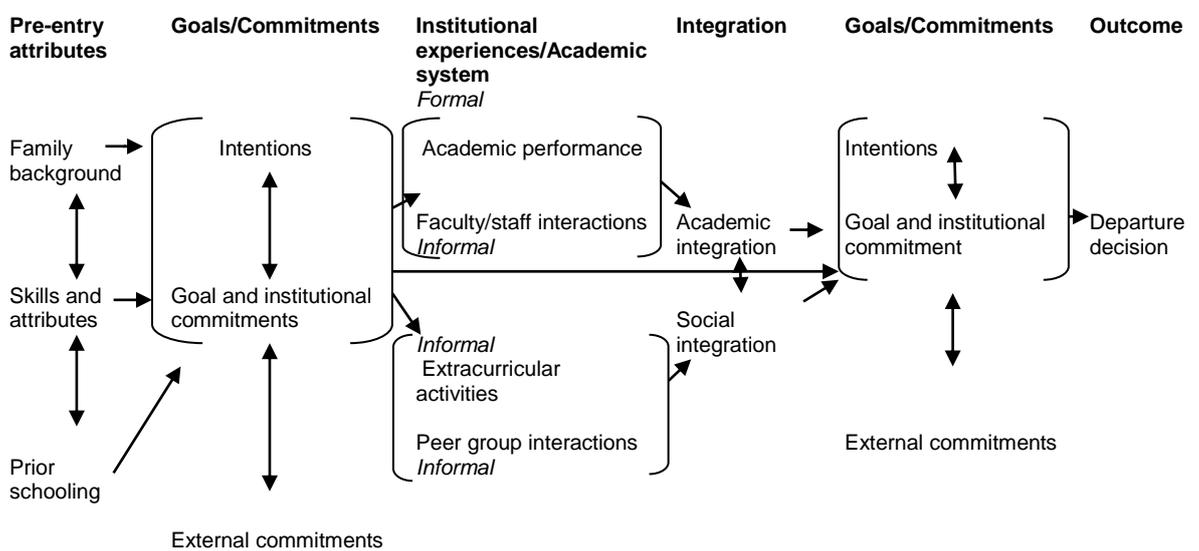
Academic achievement is the ultimate yardstick by which students are measured in medical school. The measurement of academic achievement is a 'hard' quantitative measurement, but behind what is viewed as an objective measurement, is a previous learning experience and a host of 'soft', qualitative influencing factors. These factors play a role in the academic attainment of a medical student and whether they manage to persist in their studies and graduate as a doctor. A critical period that can demarcate a successful from an unsuccessful medical student is their first-year learning experience in medical school. In the case of this study, Foundation Year medical school at RCSI Bahrain is defined as a first-year in medical school. It is widely agreed throughout the literature that the first-year at medical school yields most casualties in terms of attrition (Kruzicevic et al., 2012). Arulampalam et al., (2004a) found in their study on UK medical schools 1985-1986 that half of all attrition occurred in the first-year and the related factors were different to those that influenced later year's non-completion.

2.2. Tinto's Model of Longitudinal Departure

The first-year learning experience has been an area of interest for researchers particularly in the last twenty years and Tinto's (1975, 1987, 1993) theory that the determiners of completion are the students' academic

preparedness, combined with academic and social integration into the institution have created much debate, further research and great influence on thoughts into the first-year experience throughout the western world: United States (Kuh et al., 2006); New Zealand (Zepke et al., 2005); UK (Yorke & Longden, 2008), Australia (Krause et al., 2005). Tinto's (1993) Model of Longitudinal Departure, originally postulated in 1975 and then revised in 1987 and 1993, focused on the American context and was derived from theories on suicide by Emile Durkheim. It is an extension of earlier work by Spady (1970) and Rootman (1972) and as is the case with these earlier works, Tinto also regards third level persistence as mainly a result of a student's academic and social experiences after enrolment. The following diagram outlines Tinto's (1993) model of how the factors of pre-entry attributes; student goals and commitment; institutional experiences; and academic and social integration combine to interact and ultimately result in departure or continuation at university.

Figure 1: Tinto's Longitudinal Model of Departure



(Tinto 1993p114)

Tinto's definition of success largely focuses on academic integration, but also includes the students' involvement in the activities offered by the institution.

His widely referenced and discussed theory raises awareness that each student's journey differs and the institution has the responsibility to implement strategies to support the student journey. This theory recognises that students come to Higher Education with variances in background, schooling, skills, abilities and intentions. Tinto (1975, 1987) focuses on the areas of student pre-entry attributes, based on previous educational experience, family history and the student's own abilities. These are then combined with the experience the student has in university. The student then perceives their personal level of integration into the two spheres of academic and social integration. Attinasi (1989) built on Tinto's theories and describes the initial experience of third level education as comprising three elements: the physical, the social and the cognitive. The integration theory states that the greater the level of assimilation into third level learning, the less likely it is that students will non-complete (Chapman & Pascarella, 1993). Further discussion focuses on students inability to focus on the expectation-reality gap (Dutton et al., 2010), and the lack of preparedness through lack of information relating to the move from secondary school to third level education (Yorke & Thomas, 2003; Dodgson & Bolam, 2002) and the need to adopt a whole institution approach to facilitate integration (Castle & Kelly, 2004; Leask et al., 2005).

Proponents of Tinto's theories found noticeable differences between both academic and social integration of persisting and non-completing students (Terenzini & Pascarella, 1977), background characteristics impacting on attrition, (Stage, 1989) and commitment (Bers & Smith, 1987; Carroll, 1988). Mann (2005) discusses that there are varying degrees of comfort levels that students have when experiencing academic and social involvement and engagement within an institution and that a uniform institutional approach can result in further alienation and potentially derail students. Tinto argues that out of all the mitigating factors, it is the factor of institutional experience that is of the greatest importance.

Within the sphere of academic and social integration into university, Tinto's model places faculty staff and the student experience at the centre of the higher education learning experience, together with student intention, levels of

commitment and academic capability of arriving students, transitional adjustment, academic congruence, isolation and the external factors of finance and obligations. Tinto's theory that the greater the social and academic integration, the less likely a student will be to drop-out has been echoed, according to Chapman & Pascarella (1983), throughout the literature as a core concept on student attrition. Poor integration is impacted by difficulties in adjustment, academic difficulty, incongruence and a feeling of isolation; some effect is also felt by external factors such as finance. The integration process impacts the students in terms of what Tinto (1993) calls intentions and commitments. Intentions are defined as three types of goals; these are educational, occupational and intrinsic. Commitments are the willingness to work towards the goal and these are impacted by past experiences and the individual's personality. It is a complex interaction of these factors that determine third level education success and failure and resulting attrition rates. Tinto developed his Longitudinal Model of Student Departure (1993) to frame student attrition at any level within the third level learning experience, but most studies have applied it to the first-year experience where student attrition is the greatest (Eckland, 1964; Pantages & Creedon, 1978). Tinto's theories have dominated thinking on retention and student progression since their inception, with Braxton (2000 p7) noting that 'the departure puzzle stalled in the mid-1990's because of the near paradigmatic statute of Tinto's theory'.

2.3. Criticisms of Tinto's Model

A wide-spread criticism of Tinto's departure model is that it is rarely applied as a whole, focusing rather on component parts and specific variables of the model rather than implementing the complete model (Brunsdon et al., 2000; Johnes & Taylor, 1990; Mooney et al., 1991). It has also been criticised for its ambiguity, allowing diverse interpretations and hindering measurement and comparability (Hurtado & Carter, 1997; Braxton & Lien, 2000; Yorke & Longden, 2004). Proponents of Tinto's theory refute these arguments by stating that flexibility and interpretation are integral parts of the theoretical framework (Roberts, 2011). McKeown et al., (1993) support the aspect of

flexibility and adaptability, but talk about the need to operationalise concepts and define key terms, in other words, the need to develop and implement further clarity.

The analogy to suicide stemming from the theories of Emile Durkheim has also been criticised in terms of the inappropriate relation of attrition to suicide as being a tenuous and problematic link (Darden & Kuhn, 1985). Further arguments claim that any analogy to suicide is inaccurate, as leaving a university context, where a student has struggled, can be a positive move, allowing students to retain control and move on with their lives, which is clearly not the case with an analogy to suicide (Peng & Fetters, 1978; Adams, 1996). Peelo (2002) takes this argument one step further, stating that the case for failure should be viewed as a part of the dynamic process of learning; this developmental model is built on the notion of failure as inevitable and positive.

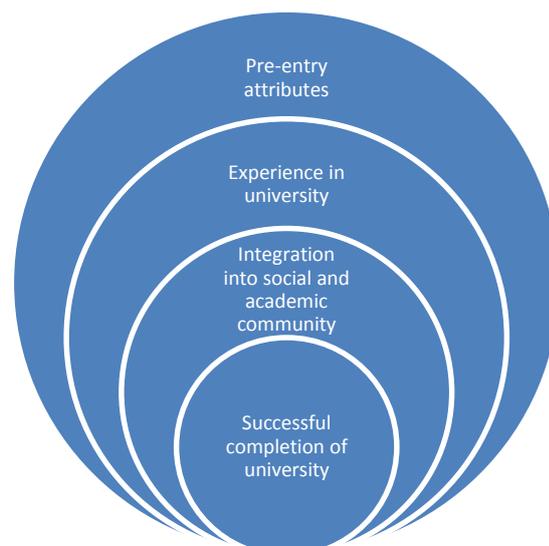
Further criticisms of Tinto's framework appear to mainly regard omissions to the framework rather than total opposition to it. Brunsten et al., (2000) contest the longitudinal model used by Tinto, contending that interactionist and ethnographic approaches could result in a more appropriate theoretical framework. Their criticisms focus on their claim that Tinto assumes how students reach dropout decisions, rather than consulting the students to test whether these assumptions hold true. They claim that by incorporating consultation with the student, the model can be strengthened. Yorke (1999) also echoes this desire to incorporate the student viewpoint. He discusses factors influencing failure as: low quality experience; poor coping with course demands; dissatisfaction with social environment; incorrect choice of course; financial problems; and dissatisfaction with university provision. He criticised Tinto's model for not including students' views on the environment, health issues, and lack of data on student experiences of teaching and learning. Despite these differences, Yorke (2002) echoes Tinto in his recommendation that institutions need to develop an orientation towards both the academic and pastoral care of students. Thomas (2001) advocates the linking of pastoral and academic care, highlighting that a supportive academic staff/student

relationship as a key provision of support and guidance. Bean & Eaton (2000) focus on retention rather than withdrawal, using psychological theories to explain relationships. Initially based on Tinto's framework of academic and social integration, they developed these aspects in terms of four psychological theories: attitude-behaviour theory, coping behavioural theory, self-efficacy theory and attribution. These elements were then drawn together to create a locus of control theory, as developed by Rotter (1966). The main difference to Tinto's theory is the addition of what Bean & Eaton consider to be a major omission from Tinto's model, that is the psychological factor, and this element is a core component of their retention theory.

2.4. Key Stages of Tinto's Model of Longitudinal Departure

The key stages of Tinto's model can be exemplified in diagrammatical form showing the concentric links of pre-entry attributes, experience in university, student perception of academic and social integration and the culmination of these factors with the successful completion of university. This is shown in the following Figure 2.

Figure 2: Key Stages of Tinto's Model of Longitudinal Departure

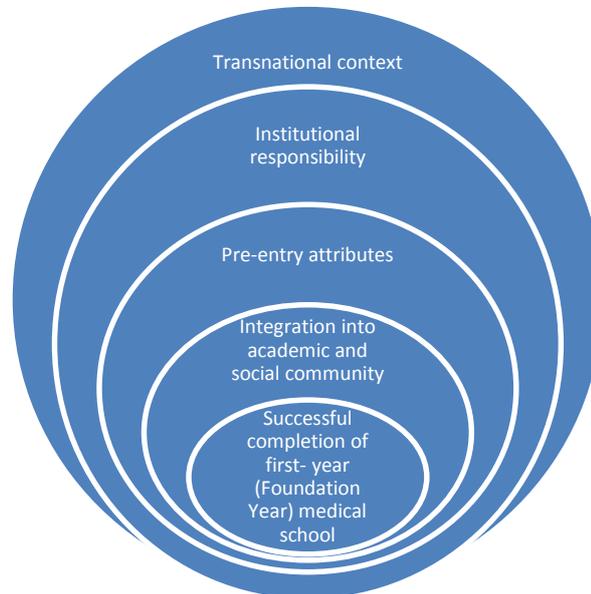


2.5. Key Stages of Adaptation of Tinto's Model of Longitudinal Departure

Adapting Tinto's theoretical framework to meet the needs of the context is, according to the literature, frequently applied and Tinto (2006b) himself indicates the necessity of modifying the model to suit the requirements of the context. To create a relevant theoretical framework that can be applied to this context, the key stages of Tinto's model are revised to incorporate the application to the transnational context and the framing of this model under institutional responsibility. Additionally, as this study is focused on Foundation Year medical school rather than the whole medical school experience, this is explicitly stated.

The differentiation between the wider category 'drop-out' or 'attrition' and the narrower one of 'academic failure' is a grey area within the literature, with many papers not differentiating between these two aspects. For the purpose of this research, academic failure will be housed as a sub-category of attrition; this definition is supported by Brunnsden et al., (2000) who state that within Tinto's theoretical theory, attrition can be sub-categorised into voluntary and involuntary attrition. They further state that within this sub-categorisation involuntary attrition refers to students who have academically failed who leave university because they do not reach the required standards to progress. Peelo (2002) draws attention to the gaps in the literature by stating that there are few attempts to understand the specifics of the sub-category of failure, despite there being a wide literature regarding the broader themes of attrition. The adaptation of the key stages of Tinto' model is presented in the following Figure 3.

Figure 3: Key Stages of Adaptation of Tinto's Model of Longitudinal Departure



2.6. Defining Success and Failure

Before moving onto the detail of the sub-categories within the adapted framework, it is necessary to clarify a definition of success and failure that will be applied to this research. Success is defined in the context of this research as gaining a pass grade or above in all Foundation Year modules. Failure is defined as gaining 49% or below in one or more Foundation Year modules in both the first and repeat examination sittings.

2.7. Transnational Context

A missing factor in utilising Tinto's theoretical framework in which to house this research is that Tinto's framework is a model that has been developed in the west and for the most part applied in the western context. In the case of this research the curriculum and pedagogical framework of RCSI Bahrain is western, specifically an Irish medical education model, but the context is transnational, being located in the Middle East. This application of the

adapted model to the transnational context is illustrated in the outer ring of the adapted model shown in Figure 3 on page 31.

Despite transnational education being a rapidly developing market, particularly in the Middle East (IDP, 2007; Murray et al., 2011), gaps exist in the knowledge of the student experience and the academic achievement of students educated in the transnational context (Mahoney, 2014). Relatively little has been written about teaching and learning in the transnational context, given the rapid growth over the past two decades. Research in this area is described as isolated and insufficient to build a comprehensive pattern of experience (McBurnie & Ziguras, 2007). Additionally, it appears that no previous research has been done on first-year failure in a Middle Eastern transnational context and specifically in relation to the Foundation Year medical school experience.

Despite this dearth of research, the phenomenon of transnational education in the Middle Eastern region has undergone rapid expansion in the last decade with one hundred and eighty-three international branch campuses operating in the world (Wilkins & Huisman, 2012). The largest host countries are the United Arab Emirates, China, Singapore and Qatar and the majority of these branch campuses have been established within the last ten years (Miller-Idriss & Hanauer, 2011). Establishing an offshore campus or a constituent university is not a risk free endeavour; it can carry the promise of rich rewards, but also brings with it the dangers of substantial losses of money and reputation (Becker, 2009). This financial basis for establishing overseas operations places them within a neo-liberal framework, which has gained momentum since the recognition of higher education as a tradable commodity (Altbach, 2004). Higher Education has therefore become part of a normative framework, scaffolded by a neo-liberal ideology, driven by initiatives by the World Trade Organisation such as the General Agreement on Trade in Services (Marginson & Van der Wende, 2007).

Research, evident in the literature, focuses academic discussion on the broad issues of internationalisation and the challenges of establishing and operating

off-shore campuses, (de Wit, 1995; Knight, 1999, 2006; Knight & de Wit, 1997, 1999), together with theories of cultural imperialism (Tomlinson, 1991), the spread of westernisation (Scholte, 2000, 2005), cultural diffusion theories (Miller-Idriss & Hanauer, 2011), the challenges of bridging the local with the international, (Hoare, 2012), and the viewing of branch campuses as belonging to a modern day colonialism, where higher education flows from more developed to less developed nations (Naidoo, 2009). Branch campuses are primarily established for income generating purposes, but are high-risk endeavours in more than financial terms (Thomas, 2012). An offshore campus not only has a physical presence within the host country, but also bears the name and bestows the same qualifications as the parent institution. The educational experience in an offshore campus does not work in isolation and is the result of interconnected experiences that include all aspects of campus life, the country in which it is situated and the country from which the educational experience is exported, (Elliot & Shin, 2002).

Despite the claims that offshore campuses, to a large extent replicate the learning experience on the home campus, there is evidence in the literature that such claims are rarely accurate (Altbach, 2010). This occurs due to many factors such as breath of curriculum, interprofessional integration; recruitment and retention of quality staff willing to work in an offshore location; competitive recruitment policies resulting in admission of lower calibre students; overall newness and lack of scale; and fewer facilities and accommodation provision. Transnational education rests on a core assumption that it is a positive expansion of an institute's activities; whilst at the same time it is a reflection of the institutes desire to maximise profits.

Political stability is an important component to consider when establishing an offshore campus. Bahrain, with its 666,172 nationals out of a total population of 1,234,571 (Economist Country Report, 2013) and its approximate 30% ruling Sunni and 70% Shia populations, is not a completely stable choice of location. The literature points to some disparities in terms of the institutional uncertainty of Bahrain as a location for establishing an overseas institution. Bahrain is described as 'moderately liberal' in terms of regulatory measures

compared to the 'very restrictive' categorisation given to the United Arab Emirates, (McBurnie & Ziguas, 2007 p77). However, Wilkins & Huisman's (2012) rating according to a measure of institutional uncertainty in the host country against the institutional difference in the host country indicates that Bahrain is high uncertainty and high difference, and advises against establishing an overseas operation as the risks are too great.

Bahrain is experiencing both internal and external uncertainty, facing the challenges of ongoing internal unrest and geographically situated within a triangle of uncertainty marked by Syria, Iraq and Iran. Since the 2011 Arab Spring, rising tensions stemming from social and political grievances on this small Gulf Island have been running high, with frequent clashes between the Shia youth and the security forces. Members of the medical community were implicated in the 2011 uprising, some of which had trained at the RCSI Dublin campus. The resulting publicity of their arrest, trial, incarceration and release in some cases, has led to political manoeuvring being played out both in the press in Ireland and Bahrain. A result of these factors is a complex and uncertain climate where RCSI has come under heavy criticism in Ireland for maintaining its presence in Bahrain (Economist Country Report, 2013). This unstable context illustrates the risk and uncertainty that western institutions can face when establishing offshore operations.

The economic forecast for Bahrain is one of persistent unrest. On the international stage, the United States continues to be an ally with its strategically located U.S. Navy's 5th Fleet based in Bahrain operating as a deterrent to Iran across the Strait of Hormuz. The United States, United Kingdom and other European allies have quietly criticised the government crackdown on protesters, but have fallen short of outright condemnation, cognisant of the strategic position of Bahrain and relations with Saudi Arabia. Political instability in Syria and more recently Iraq has reached critical levels, with the potential of extension into neighbouring Middle Eastern countries a possibility.

Meanwhile, third level education continues to expand in the region. Competition to develop knowledge hubs in the Middle East is fierce, with Jordan hoping to increase its numbers of international students from nineteen thousand, five hundred in 2003/4 to one hundred thousand by 2020. Qatar is creating 'Education City' which is to include Carnegie Mellon and Georgetown Universities amongst others. The aim is to become a 'hub for the generation of new knowledge, a place that provides researchers with world-class facilities, a pool of well-trained graduates' (Qatar Foundation, 2005). Dubai's Knowledge Village comprises fifteen foreign universities that aim to attract regional students together with international students. RCSI Bahrain is part of this regional push towards knowledge economies and despite competition and political uncertainty, RCSI Bahrain can be said to be riding the storm of complexity, experiencing rising applications each year and expanding admission figures, whilst providing a high quality medical education to its students and further strengthening its name as a leading provider of health care education in the region.

Despite continuing signs of success, the effect of internal and external uncertainty can be insidious on transnational institutions, with student visa applications presenting a challenge and resulting in lack of expansion into certain countries, parental resistance towards sending their children to what may be considered an unstable location, and staff recruitment proving a challenge. Ultimately the effect is that the quality of incoming students may not match that of the parent institution, a larger percentage being non-native speakers of English, with differences in previous learning experiences. A result of this is that failure figures can be higher than home campuses, particularly in the first-year of learning.

2.8. Institutional Responsibility

An area of importance within the field of failure is that of responsibility. Blythman & Orr (2002) argue that student failure and attrition are institutional responsibilities and are an indication of institutional failure. They argue that a top-down paradigm should be used to consider these issues and that failure

should be a key part of the institutional dialectical process. The Higher Education Funding Council for England (1999a) state that non-completion rates should be considered together with access figures and should both be considered in the context of the strategic directive of intent that is the institution's mission. Furthermore, they note that reference is usually not made to any form of failure within an institute's mission statement, claiming that mission statements appear to deal with the assumption of success and omit what is frequently the hard reality of failure. The omission in an institute's mission statement to any reference to failure is evidence of the unpopularity and lack of strategic address of failure within the educational system.

Failure is not only overlooked in the overall mission of third level institutions, but is overlooked in planning processes and procedures that focus on the successful rather than the unsuccessful student. Failure seems to be an issue that institutions omit in the core mission values that in turn direct institutional strategy and policy. The effect of this omission is that institutional exit can become a covert activity rather than the transparent approach that should differentiate education. Failure and attrition can be viewed as a seeming acceptable collateral damage of the higher educational system. This approach means that students can exit higher education negatively, with only lost years and debt to show for their experience, whilst stakeholders, whether the students themselves, their parents or governmental sponsoring bodies bear the financial brunt.

Although, failure and attrition at medical school is traditionally less than in other disciplines (O'Neill et al; 2011), the stakes involved in graduating a successful medical student may be seen to be higher. These high stakes necessitate a rigorous process, as the implications of graduating incompetent doctors are great. As Peelo (2000 p2) states, failure is a necessary part of the educational process and it is 'an essential demarcator of success'. The elimination of failure is not achievable, but limiting failure through rigorous selection procedures and comprehensive student support are desirable aspirations, as behind a student who fails is a story of struggle, disappointment and of staff time and attention.

2.9. National Impact of Failure

The impact of failure reaches above institutional leaders. Such government sponsored research as the Report of the National Committee of Inquiry into Higher Education (NCIHE, 1997) indicates the national and international strategic importance of retaining students and facilitating success at third level learning. Where governments have invested either directly or indirectly within an educational system, failure and non-completion can be construed as inefficiencies in the system, whose numbers should be minimised. A further aspect to national governmental interest in investing in transnational education is what Thomas (2001) refers to as the additional governmental benefit of maximising third level success as it promotes citizenships and social cohesion, both these issues are pertinent elements in the post Arab Spring era.

Healthcare and education have been priority sectors targeted by the Bahrain Economic Development Board with previous years showing ambitions to make Bahrain a regional hub for healthcare tourism. This strategic direction is fuelled by the desire to move the Bahraini economy from primarily oil based to a knowledge economy as part of the 2030 Strategy. Despite these plans losing a degree of momentum owing to the financial crisis of 2007 and the civil unrest of 2011, the development of RCSI Bahrain continues, with the need to graduate competent medical students framing not only the reputational and financial success of RCSI, but also the strategic vision of a country struggling with redefining its global image. Within this vision it is highly desirable to minimise failure and increase success rates to facilitate the national need for highly trained medical doctors to meet the burgeoning needs of Bahrain and the Gulf region.

2.10. Prior Student Learning and Attainment

A core component of Tinto's theoretical framework is the impact of student integration into the academic community (Fitz et al., 2005). This line of argument follows the proposition that the more congruence that exists

between familiar and previous learning experience, then the greater the likelihood of student success. 'Fit' is described in the literature as being sufficiently prepared for university (Van de Meer et al., 2010) and it has been identified as a factor that relates to the first-year experience and influences success (Torenbeek et al., 2009). Fit has been described as the extent to which the teaching practice, content and study load are continued from second to third level education and the appropriateness of student expectations on entering higher education (Poerstamper, 2005). Torenbeek et al., (2009) studied the connection between the student perception of fit and how this relates to first-year achievement. They conclude that the more positive the student perception of fit, the greater the first-year success. Insufficient preparation for university and the corresponding bad fit has been shown to lead to integration and adjustment problems, resulting in failure and withdrawal (de Vries & van der Velden, 2005; Krause et al., 2005; Yorke & Longden, 2008). In addition to the fit of prior educational experience and academic congruence, prior academic achievement has been found to have a great effect on performance and success of students in first-year tertiary studies (Yates, 2011).

Wu et al., (2007) developed a probability model to investigate student attrition through the use of attributable risk and they found that first-year university Grade Point Average (GPA), secondary school GPA and Scholastic Assessment Test (SAT) composite scores were the top risk factors for predicting first-year failure. They also found that secondary school GPA had a correlation with first-year university GPA. Interestingly, they conducted a similar study with fifth-year attrition and they found that the factors were the same, which indicates that attributed risk impacts not only on the first-year experience, but learning and success throughout the student journey. In their systematic review on factors associated with success in medical school (Ferguson et al., 2002) found that previous academic performance accounted for 9% variance in the overall performance at medical school. Achievement and persistence have been linked throughout the literature with students' prior experiences and previous higher levels of academic performance can be

accurate predictors of academic performance in higher education and specifically in medical school (Bruinsma & Jansen, 2009).

Fit and its impact on integration is a highly relevant issue to the RCSI Bahrain context, where many students joining the university enter from a local Arabic secondary school background (Tawjiheya). This learning background, according to local research by Sangoor (1998) and Shirawi (1989), follows a rote style, surface, passive learning model. Further research by (Leksandar-Hayes, 2013) found that the Arabic Government school curriculum seem to have a high level of scientific curriculum fit with the Foundation Year western medical school model. However, it is learners who fail to transition to a more independent model of learning and continue in implementing a more dependent model of learning, who are associated with poor academic outcomes in Western universities (Biggs, 1987; Watkins & Hattie, 1985). The difference in the nature of the curriculum at school and third level can not only impact on performance (Rennie et al., 2001), but can result in what Quinn et al., (2005) refer to as 'academic culture shock'. The social, academic and institutional differences between a student's school and university learning may well influence their preparedness for a significantly different learning experience (Birch & Miller, 2007; Pike & Saupe, 2002; Terenzini et al., 1994). Braxton et al., (2000) and Thomas (2012) discuss the role that academic teams can have on the academic success of students and on bridging the transitional gap.

Foundation Year medical school catapults students into very high numbers of students, different learning styles, and potential relative difficulty in accessing help in terms of staff and resources. Discrepancies between student expectations and first-year reality exacerbate difficulties that students face in their transition (Sander et al., 2000). This highlights a potential gap in terms of curriculum, learning and teaching that this group of students need to cross towards being independent learners and sustaining lifelong learning; these aspects are integral components of the medical university's outcomes based curriculum (RCSI, 2010). This further raises the question as to the responsibility the university has to provide a scaffolded entrance of learning to

bridge the transnational gap that can exist and what form such a programme should take.

Average grades in first-year university, which in this study is defined as Foundation Year, can be between 20-30% less than those experienced at secondary school, (Birch & Miller, 2007), and this can be an unforeseen shock to students who are familiar with achieving high academic grades. Students with a high perception of their abilities at school based on advanced levels of achievement can attain lower first-year grades than those with average or lower expectation (Pithers & Holland, 2006; Smith & Wertlieb, 2005). As students who gain entrance to medical school are those who are amongst the academically brightest, this phenomenon could have great impact. Perry et al., (2005) talk about the 'paradox of failure' that stems from differences between expectations and reality. Although most students expect the learning environment to differ from secondary school and have the expectation of being responsible for their own success (Crisp et al., 2009), they also expect much higher levels of lecturer support, assistance and feedback than in reality the experience presents. Jackson & Dawson-Saunders (1987) found that students who experience academic success in their first-year proceed to have fewer withdrawals, repeat exams, and repeat years of study on their academic undergraduate records than students who have academic difficulty in their first-year. Cross (1996) refers to the management of expectation and the institutional responsibility to equip students with comprehensive and sustained support. These findings raise questions regarding failure in Foundation Year medical school and students' long-term success, and the corresponding responsibility of the institution, specifically for those students entering from a less contiguous learning background.

Exacerbating the gap of fit is the difference in assessment between secondary level and higher education, as the design of assessment drives the learning process (Biggs, 2003). Students are shown through the design of assessment what they need to learn and the manner in which they need to learn it. This phenomenon was first described by Snyder (1971) as the hidden curriculum and is major driver in the motivation of student learning and has resulted in

'selected negligence', (Editorial, 2010) with students picking and choosing learning based on assessment requirements. The majority of assessment in a traditional medical curriculum is through formative and summative multiple choice and short-note examination questions, this according to Tan (1992) can result in students taking a surface approach to their studies, which has been linked to shorter lasting learning outcomes. A further associated element of assessment type is referred to by Gibbs & Lucas (2006) in their findings that a higher proportion of coursework increases the grade average. A move away from a tutor-centred transmission and assessment approach and towards a student-centred approach of more frequent assessments and greater grade distribution is advocated (Barr & Tag, 1995; De Corte, 1996). Timely, useful feedback would also be an aspect of a more student friendly approach (Wheatley, 2012) and mark a move towards what Boud (2000) refers to as a 'learning society'. However, in traditional curriculum medical school it is not widespread practice to include quantities of coursework, therefore students cannot benefit from increasing their grades through this assessment type.

Assessment is sufficiently challenging when students are accustomed to the same educational system, but becomes more so when this is not the case. Pyvis & Chapman (2005 p32) refer to this phenomenon as students lacking the 'cultural knowledge' of the requirements of the lecturer and the institution. They describe this process of transition in transnational campuses as being comparable to the culture shock that an international student might experience when travelling to study in another country. An additional element on entering medical school is the increase in class size which Lindsay & Paton Salzberg (1987) state results in lower average grades. A medical student can leave a secondary school experience where they are a member of a group of thirty students, to enter a medical school where lecture size can reach in excess of two hundred students. In addition to the impact factor of large class sizes, is the effect that this can have on the understanding of message and material on the non-native speaker of English.

Self-efficacy and locus of control theories have also been discussed in the literature as having an influencing effect on success and failure. Self-efficacy refers to the belief in the ability to manage potential situations by executing the course of required action. Self-efficacy has been linked to motivation and commitment levels and an individual's willingness for risk-taking. Yorke & Knight (2007 p160) refer to this as having the confidence 'to make a difference', and Rotter (1966) refers to this concept as 'a locus of control'.

The literature review now moves on to consider pertinent aspects of student pre-entry data to success and failure in this transnational Foundation Year medical school experience.

2.11. Pre-Entry Data

Much research in a western context has taken place on retrospective studies considering links between pre-entry data and corresponding failure and success. It is of interest to consider these findings, as they will create the basis for the analysis of data in this transnational Bahraini context. Throughout studies on failure at medical school which are relevant to this Foundation Year first-year experience, many focus on incorporating data on some, if not all of the following characteristics: age; gender; nationality/ethnicity; prior academic achievement; English language ability; evidence of academic struggle and interview grades.

2.11.a. Age

Student age seems to have little impact on failure at medical school. The primary age range of a first-year medical student is between eighteen and twenty years and throughout the literature it appears that age is not a significant factor. Despite this generalisation, there are occasional studies such as Arulampalam et al., (2004a, 2007) which find that students aged twenty-one and above have a greater chance of dropping out of medical school than those aged below twenty-one years.

2.11.b Gender

A consistently high finding in the literature is that women tend to perform better than men in their medical training (McManus et al., 1996; Ferguson et al., 2000; McManus et al., 1986; Oggins et al., 1988; Martin et al., 2000). This supports findings that generally women out-perform men in different educational fields (Haq et al., 2005; Dayioglu & Turut-Asik 2004; Catagnetti & Rosti, 2009). From regional Middle Eastern studies Al-Mously et al., (2012) found that females outperformed males, with an explanation being related to the requirements for females to live within a conservative climate which keeps them under pressure to gain and retain social recognition, prestige and high income through academic attainment. In relation to non-completion and gender in first-year medical school, findings are inconclusive, for example Arulampalam et al., (2004b) found male gender indicated an 8% higher likelihood of non-completion than females, but in their 2007 research they found the opposite. Whilst Yates (2011) found that males were 6% more likely not to complete than females.

2.11.c. Nationality

In previous studies nationality and ethnicity have had some mixed results. Some evidence in the United Kingdom and United States studies indicate that ethnic minority groups are more likely to fail than non-minority students (McManus et al., 1996; Campos-Outcalt et al., 1994). However, non-UK ethnic students have been found to perform better than UK Caucasian students (McManus et al., 1996). The literature provides no information regarding nationality or ethnicity on students' performance at a transnational medical school, nor in relation to the Arab Gulf region. In terms of successful completion of medical school, Yates (2011) found overseas students were 5% more likely to non-complete than home students.

2.11.d. Prior Academic Achievement

Prior qualifications, admissions test scores and interview scores are seen to be impacting factors (Arulampulam et al., 2004b, 2007; Gough et al., 1975; Powis et al., 1992; Strayhorn, 1999; Urlings-Strop et al., 2009; Ward et al., 2004; Willoughby, 1981; Neame et al., 1992). Jackson & Saunders (1987) found a connection between low grades in Biology, Chemistry, Physics and Mathematics and academic difficulty in first-year medical school. Arumpulam et al., (2004b) found that students who scored better in subjects other than the core sciences of Biology, Chemistry and Physics in secondary school were more likely to transfer out of medicine, indicating that academic performance in the core science subjects underpins academic success at medical school. Bone & Reid (2011) state that students who complete Biology to a high level at secondary school, perform best when they also study Chemistry. This indicates that students without a background in Chemistry could struggle with the early medical content in Biology. This is the result of a sound knowledge of the fundamentals of Chemistry being needed to understand aspects of Biology such as Biochemistry and Molecular Biology which include metabolic processes; protein synthesis; and DNA replication. Jackson & Dawson-Saunders (1987) found that low science GPA scores on entering medical school were an indicating factor in student failure.

According to the literature, prior learning in science at secondary level education appears to be an important factor in determining student success. Students with fewer subjects that train them in specifically traditional science subjects may lack scientific language and enquiry skills and subsequently display lower achievement in their first-year learning.

2.11.e. English Language

Despite meeting English language requirements at school, students from non-English speaking countries entering medical schools where the curriculum is delivered through English, appear to encounter considerable difficulties. RCSI Bahrain requires that students submit an International English Language Testing System (IELTS) grade as part of the application procedure. IELTS is the world's most popular English language examination for entry to higher education and integrates language testing in all four skills areas of reading, writing, speaking and listening. It is widely recognised as an accurate and reliable testing system for entry into university (British Council, 2014).

Hayes & Farnill (1993) demonstrate that English language is a strong predictor of academic success, with their research demonstrating that the better the competence in language, then the better the academic performance. Yates (2011) found higher levels of failure amongst overseas students, particularly from Asian and African countries, with an effective factor being English language ability, concluding that students coming from an Asian or African background combined with low English ability seem to face an increased challenge.

From a Middle Eastern perspective, English as a medium of education in medical schools for the non-English language speaker is considered one of the most important challenges in the region, Al-Mously et al., (2012 p171). English proficiency is necessary to not only understand course content and demonstrate student learning, but functions in a wider role as a means to cultural and social capital within the Middle Eastern region. However, a student graduating from an Arabic curriculum school with a score of 95% in English may correlate to no more than IELTS band 4, this equates to a limited user with basic competency limited to familiar situations, encountering frequent mistakes and being unable to use complex language (British Council, 2014). This dichotomy means that higher education institutions in the

region face the combined challenge of the actuality of widespread low-level English, together with discrepancies in the student's perception of their own English language ability.

With regard to combining the elements of language and gender, data analysis in previous studies has shown a strong correlation between language proficiency and female gender. This has been observed with Arabs learning English (Khan, 2011; Schmidt et al., 1996; Shaaban & Ghaith, 2000) as well as English learners elsewhere in the world outside the Arabic context (Semmar, 2006; Zammit, 1993; Karsenti & Thibet, 1994).

The language of science is an important factor when considering content comprehension and English language proficiency within the medical education field. Jointly these elements can compound difficulties that students face at tertiary level. The language of science in an English language curriculum secondary school can be very different to that at third level learning, even when the delivery language is the same. However, when the medium of language in which the content is delivered changes, additional transitional burdens are evident (Phillip & Norris, 2009). Brass et al., (2003) state that there is evidence to show that much of a student's learning in science is transitory at secondary level which does not result in them developing a deep conceptual understanding, which (Phillip & Norris, 2009) state is connected to the challenges that students face when negotiating the language of science at university level. Rennie et al., (2001) identify another potential learning gap as they compare the difference in learning between broad conceptual understandings related to real life experiences required at secondary school, with the focus on fundamental, abstract principles at tertiary level. If students are unprepared for these differences in approaches then the changes in teaching styles and expectations could lead to academic struggle.

2.11.f. Academic Struggle

A literature review by O'Neill et al., (2011) links academic struggle with first-year medical school dropout, but does not find specific patterns of student data variables to be impacting factors. However, O'Neill's study focuses on a western context and does not include data on transnational medical schools, and as such, findings can be indicators to the transnational context, but not representational. Hojat et al., (1996) and Stetto et al., (2004) found a connection between academic struggle and eventual dropout from medical school. Specifically, Stetto et al., (2004) found a strong connection between repeating an academic year and eventual dropout. Jackson & Dawson-Sauders (1987) found successful students had uneventful academic records, few, if any, repeated courses, or repeated years. These findings indicate that understanding factors relating to student failure and developing a strategy to address them needs to be developed and applied on entry to the Foundation Year experience in order to prevent failure. Once a student fails, it appears very difficult to make up lost ground and to regain and retain success.

2.11.g. Interviews

Interviews have been found to be able to predict future success, in terms of early years' academic success and dropout rates, (McManus & Richards, 1986; Murden et al., 1978; Lazin & Neumann, 1991; Powis et al., 1992; Calkins et al., 1987; Hall et al., 1992; Meredith et al., 1982; Elam et al., 1997). These studies found that interview scores were able to predict future academic success and were useful as a predictive tool. However, little information is known about inter-interviewer variation in rating students and interview approach and this is a factor that may impact the accuracy in relating interview outcomes to student academic performance (Elam & Johnson, 1992).

2.12. Research Expectations

From the review of the literature there are already expectations as to what the research may uncover. Prior academic performance in secondary school has been shown to be a strong indicator of success in higher education in previous studies (Baker, 2008; Bruinsma, 2004; Jansen, 2004; Sweet, 2011) and so it is expected that those students who enter with higher secondary school level grades are also those who could achieve higher grades in their summative examinations. Students with lower levels of English language proficiency are seriously disadvantaged in the medical school learning process (Hayes & Farnill, 1993), so it is expected that a strong relationship between failure and low level English, which diminishes as the language level of the students' increases, will be found. Higher achievement at school is an impacting factor in terms of motivation, (Braxton et al., 2000; Stage & Hossler, 2000) and so higher levels of motivation and engagement from these students is anticipated. Tinto's studies according to Sweet (2011) show that demographic variables are found to be less important than academic integration in ascertaining patterns of attrition, so limited links between for example nationality and performance are foreseen.

Nicholson (1990) concludes that there is a positive relationship between fit in the move from secondary school to higher education. The greater the fit in terms of previous and current learning experience, the fewer problems arise in terms of integration in the transition period. The result of this better congruence is that students have more time to devote to their studies. In accordance with this thinking, it is expected that students entering from an English curriculum private school education would be better prepared for an Irish medical school, than those from an Arabic curriculum government school background. Further research (de Vries & van der Velden, 2005; Krause et al., 2005; Yorke & Longden, 2008) indicates that insufficient preparation and resulting poor fit leads to adjustment and integration difficulties leading to early withdrawal, further supporting the hypothesis that students from a English language private school education will outperform their Arabic curriculum government school counterparts.

In terms of institutional integration, student-faculty interactions develop the student's sense of support and belonging (Pascarella & Terenzini, 1980), so it is anticipated that students who demonstrate a greater sense of institutional belonging would also demonstrate higher levels of academic achievement. Many studies (McManus et al., 1996; Ferguson et al., 2000; McManus et al., 1986; Oggins et al., 1988; Martin et al., 2000) find a positive link between female gender and academic performance and so on this basis it is expected that females will academically out-perform males. Additional studies have investigated the effect on academic performance of age (Arulampalam et al., 2007), having a previous degree (Craig et al., 2004) physical, emotional and mental health (Hojat et al., 2002; Austin et al., 2007), social and economic factors (Cooter et al., 2004); Powis et al., 2007) and institutional impact (Arulampalam, 2007), but as yet the studies are too few and methodological disparate to draw firm conclusions (Stephenson et al., unpublished). On this basis it is not anticipated that data will be found to support these aspects.

2.13. Chapter Two Conclusion

Identifying factors that influence success and failure rates in Foundation Year at RCSI Bahrain would benefit all stakeholders, not least the students themselves. Furthermore, it could guide specific student support and interventions, programme design and inform a review of the admissions criteria. The utilisation of Tinto's theoretical framework provides a tried and trusted model by which to investigate student success and failure in Foundation Year medical school. The focus in this application of Tinto's model is on academic success and failure, which is the stated sub-category of involuntary non-completing students (Brunsden et al., 2010), discussed in 2.5 on page 30. A model of the Key Stages of Adaptation of Tinto's Model of Longitudinal Departure is shown in Figure 3 on page 31, demonstrating the concentric relationship which leads to academic success or failure. The addition of the transnational context to the adapted model allows the development of a contextually situated picture to emerge. The focus on

academic integration, whilst still acknowledging the role of social integration, provides the opportunity to investigate the influence of academic integration in detail. The recognition that this theoretical model of student success and failure is positioned under the institutional umbrella allows the integration of institutional responsibility.

Drawing together the themes in the literature, the following elements form the grounding for this research: students enter Foundation Year after experiencing a range of secondary school educational experiences which may impact first-year medical school performance; students' transition can be viewed in terms of social and academic integration, although the focus in this research is on academic integration; student success and failure needs to be investigated using both top-down and bottom-up approaches and so data will be looked at in terms of academic achievement and student perceptions. The construct of success and failure in Foundation Year medical school in a transnational context can be investigated through applying Tinto's (1993) Model of Longitudinal Departure. Finally, it may be possible by considering the sets of quantitative and qualitative data to identify influencing factors which impact student academic performance in Foundation Year medical school. To investigate these themes the following questions are re-presented:

Question 1

How do previous learning context and achievement, English language ability, and student data* correlate with academic performance in Foundation Year Medical School?

*Age / gender / nationality / secondary school GPA / secondary school curriculum / English level / interview score

Question 2

What is the student perspective of reasons for success and failure in Foundation Year Medical School?

Sub-question 2.a

What is the academic staff perspective of reasons for success and failure in Foundation Year Medical School?

Question 3

What factors influence student academic transition in Foundation Year Medical School?

Question 4

What are the implications for programme design, student support and entry criteria of these findings?

As with most educational research, the findings from this research are not automatically transferable, but can help inform the gap in knowledge on the learning experience in the Middle Eastern transnational context, and extend existing knowledge regarding factors that may influence success and failure in the Foundation Year medical school experience and the ways in which these might be addressed. The discussion now turns to consideration of the methodological approach of this research.

Chapter Three

Methodology

3.1. Introduction to Chapter Three

This chapter considers the methodology that underpins this study by firstly framing the methodology against the guiding theoretical framework and through the presentation of a diagram of the methodological approach. The differences between biomedical and medical education research, and why this distinction is necessary in relation to this research, are then discussed and diagrammatically presented. The ontological and epistemological guiding principles of the research are then considered. Following this, the research design is discussed against the framework of social constructivism, through utilising Braun & Clarke's six stage thematic analyses (2006). The outline of previous knowledge that informs and guides the research is then discussed, before moving onto the methodology including the methods and the stages of the research. Data analysis background information regarding the Foundation Year curriculum and the justification for inclusion criteria is then presented. The chapter concludes with reference to the limitations of the study.

3.2. Framing the Methodology

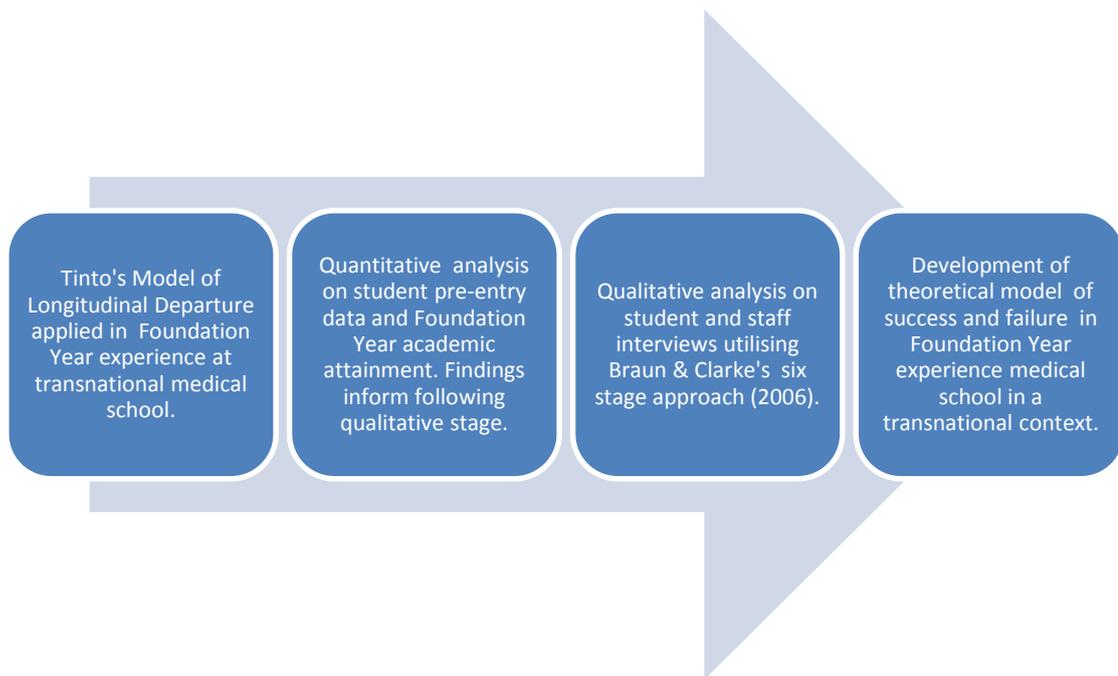
Despite a growth in medical research in recent years (Harden et al., 1999; Dauphinee & Wood-Dauphinee, 2004), there are arguments that a lack of theoretical framework in medical educational research has had a detrimental effect on advancing knowledge (Bligh & Parsell, 1999; Dolmans, 2003). Criticisms focus on the omission of the middle step of research - model formation and theory building, and therefore the facilitation of a cycle of knowledge by building on previous results.

This study follows Tinto's Model of Longitudinal Departure, illustrated in Figure 1 on page 25, which allows an explicit statement of theoretical assumptions, model formation and resulting theory development. The

variables used in this application of Tinto's model to a transnational medical context are consistent with the widely accepted definitions of the essential components in the model: pre-entry attributes; experience in university; academic achievement; academic and social integration; and the criterion of student failure, which is a stated sub-component of the broader theme of student attrition that is discussed in 2.5 on page 30. Additionally, in line with Tinto's (1993) data collection in his own studies, the longitudinal nature of student failure is reflected by the longitudinal data gathering design of this study.

The study considers the pre-entry attribute data for three hundred and eight students in the three Foundation Year cohorts from 2010-2012. Findings from the pre-entry data, together with academic attainment in Foundation Year, inform the following qualitative investigation into ten students, who have completed Foundation Year, and three Foundation Year academic staff members. The students and staff are asked a series of questions shown in Appendix 1 to better understand their perceptions of student academic success and failure in Foundation Year. Results from these three sources create the data corpus, which is then analysed in accordance with identified data sets through applying Braun & Clarke's (2006) six stage approach to thematic analysis, to consider failure and success from both the institutional and student perspectives in order to identify common themes. Empirical findings from this study are used to evaluate the efficacy of Tinto's Longitudinal Model of Departure to facilitate model formation and theory development to further inform success and failure in the Foundation Year experience in medical school in a Middle Eastern transnational context. This approach is exemplified in the following diagram.

Figure 4: Methodological Approach



Before moving on to the research design, a comparison is made between traditional bio-medical research and medical education research to clarify and justify the application of a social constructivist epistemology to this research.

3.3. Medical Education Research and Scientific Research

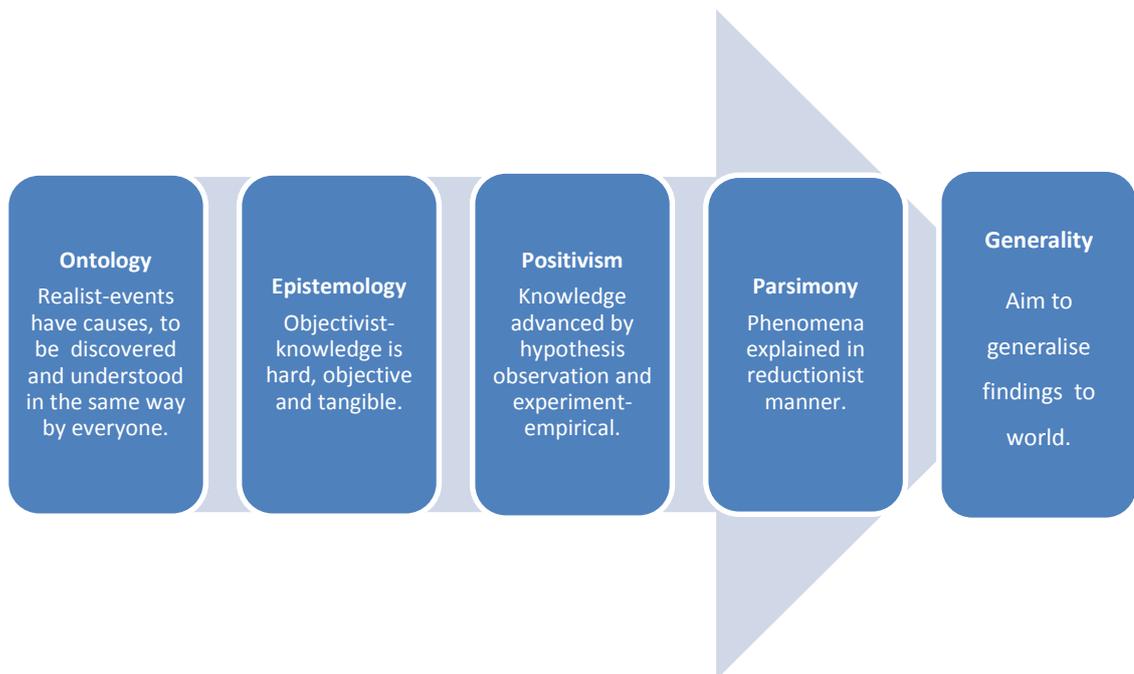
Medical education research is conducted to deepen the knowledge of learning and education by studying impacting phenomena; it is not simply about answering local, concrete questions, but about framing researchable questions which are related to wider questions about learning, teaching and education that are studied within a local context. Medical education is a complex discipline with practices varying across locations, a fact reflected in the ability to map medical education only in part against the Bologna Framework, as discussed in 1.3 on page 22.

Medical education research findings can rarely claim to be generalisable (Regehr, 2010), but should be viewed as forming a part of a jigsaw rather than

a complete picture. A characteristic of medical education research is that its practice and delivery are mainly non-standardised; this differentiates it from biomedical research with its close alignment with positivistic paradigms. Medical education, which in the case of this research is being investigated under the tenets of a social constructivist epistemology, stands on a subject-subject approach to its area of study rather than the subject-object position taken by biomedical science under a positivist epistemology (Giddens, 1976). This fundamental difference means that this research rejects the belief that human behaviour adheres to general, universal laws and is characterised by regularity. It adopts the relativist ontological position that the individual creates, modifies and interprets the world and the epistemological position that knowledge is personal, subjective and unique and is constructed by an individual's interaction and interpretation of the world.

The application of what are traditionally social science research approaches within the field of medical education may have led to an uneasy contiguity in medical education institutions between the traditional positivist approaches frequently held by leaders and decision makers in medical education, who stem from biomedical backgrounds, and the constructed approach employed by medical educators. Despite there being an increasing awareness of the complexity of medical education research and the need to broaden the research paradigms to facilitate greater understanding, this difference continues to exist (Campbell et al., 2000; Ward et al., 2009a; Bunnis & Kelly, 2010). This mismatch in ontological and epistemological position may well have an effect on the advancement of knowledge within medical education and in the approach to research and the interpretation of meaning within this specific field. This interface between biomedical and medical education research, which takes place within medical educational institutions, can lead to a dichotomy that requires clear articulation of aims in order to achieve ontological, epistemological and purpose differences between the two research fields. In line with this requirement for clarity, the following Figure 5 exemplifies the grounding for scientific research and then moves on to discuss the framework for this research.

Figure 5: Tenets of Scientific Research

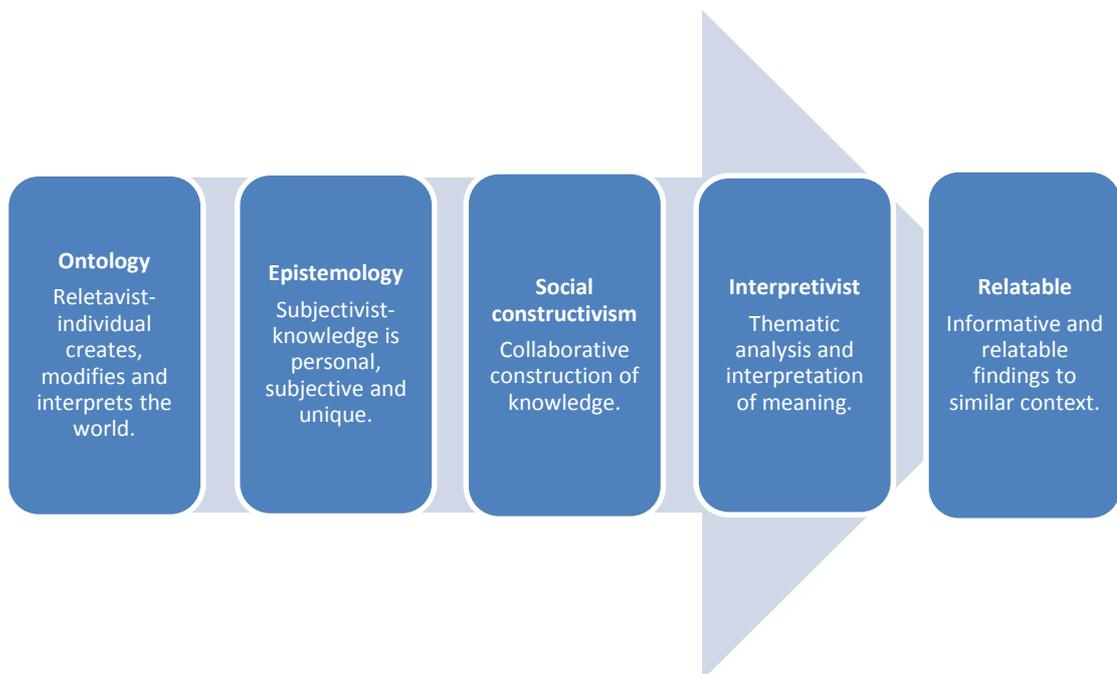


Scientific research is where the researcher's relationship with the world is housed within a realist paradigm where events have causes and these causes and links can be discovered. The researcher is an observer and explorer of hard and tangible data which is external to the researcher and discovered through quantitative data collection methods. Within this paradigm science is considered to provide the 'clearest possible ideal of knowledge' (Cohen et al., 2007 p11) guided by the tenets of empiricism, parsimony, hypothesis and correlations. However, this positivist paradigm has limited application when understanding human behaviour and social phenomena and where according to Cohen et al., (2007) a reductionist and mechanistic approach fails to capture the essence and nuances of life and mind.

The ontological and epistemological position of research is integral to the theoretical framework and underlies the whole research process, playing an implicit role in the research methods and research questions. The ontological and epistemological frameworks provide the pillars of the paradigm in which research is situated and have a direct relationship with each other. Crotty (1998) states that an ontological stance implies a particular epistemological

position and vice versa, and so these elements cannot be viewed as separate entities. In line with Crotty's thoughts, it is necessary to view both of these aspects as part of a whole, as presented in Figure 6 below. Despite the presentation of a positivist research paradigm in Figure 5 in order to better understand the dichotomy that can exist within medical educational institutions, this research is placed exclusively under the social constructivist paradigm, applying an interpretivist approach throughout. This is illustrated in Figure 6 below.

Figure 6: Tenets of Research



Epistemologically, this research is placed under the umbrella of social constructivism, as the author believes that human interaction is relational and rejects the idea that the world can be objectified outside an individual's construction of it. This follows the beliefs held by Guba & Lincoln (1998) who state that constructivist research is relativist, transactional and subjectivist and emphasise the diversity of interpretations that can be applied. Unlike positivism and its epistemological underpinning that knowledge is hard, objective and tangible, social constructivism is part of the anti-positivism approach that sees knowledge as being in a constant state of revision, which

is 'personal and unique' (Cohen et al., 2007 p7). It is based on a profound interest in understanding what human beings do and say, and rejects the premise that there is a permanently fixed reality. Social constructivism views culture as emerging and in a constant state of construction and reconstruction (Bryman, 2008) and subjectivity grounded within the social context (Burr, 1995). It is the role of student interaction with the elements of culture and knowledge and the desire to investigate the students' own construction of the reality of their learning experience that places this research under the epistemological umbrella of social constructivism. The goal is to gain insight into the complex world of experience from the point of view of those who have lived it, rather than proving pre-conceived theories. This aspect of valuing and acknowledging a learner's knowledge that is embedded within their social setting is a theme that runs through the core of this research. This stance has many implications. It means that the ontological paradigm contains multiple constructed realities, where humans are an important data collection instrument and are contextually situated at the heart of the research process as, 'the knower and the known are inseparable' (Lincoln & Guba, 1985 p37). The aim is the identification of contextualised meaning to establish a collaborative reconstruction from these multiple realities. This position implies that both the researcher and the participants have a co-producer role in the research process and in negotiating the outcome.

3.4. Research Design

This research follows a case study design, within a social constructivist, interpretive framework, utilising thematic analysis. The aim of a case study is to develop a pertinent hypothesis and propositions, such as model formation, from a given case for further enquiry and theory development. Case studies are a distinctive approach to empirical research that facilitates the holistic and meaningful characteristics of real life events. They include the development of detailed, intensive knowledge about a case and place it contextually within a stated frame - here this is academic success and failure in Foundation Year 2010-2013 that is transnationally contextually situated within a Middle Eastern medical school. Case studies are defined as an 'exploration of a bounded

system' or a case over time through detailed, in-depth data collection; they are 'bounded by time and place' (Creswell, 1998 p6). As this is a flexible research design, specifically in the qualitative data collection stage, where students are interviewed, some details will emerge which will require clarification and fine-tuning.

Thematic analysis utilising Braun & Clarke's (2006) six stage approach is utilised to capture themes regarded as pertinent to the research questions presented in 2.13 on page 50. It is an aim of this research to provide a detailed thematic description of predominant captured themes relating to academic failure and success in Foundation Year medical school utilising Nvivo 10 as a coding and analytical tool. This rich application of thematic analysis is viewed as being particularly useful in the investigation of under-researched areas (Braun & Clarke, 2006), such as this transnational context. The theoretical interest in success and failure in Foundation Year medical school housed within an adaptation of Tinto's framework, guides an inductive approach to analysing the data, with knowledge from previous studies as discussed in 2.11 on pages 42-47 informing, but not guiding the analysis and capturing of themes in the data sets. The themes are collated through semantic content, then interpreted by theorising their patterns and wider meanings and implications (Patton, 1990). Latent level analysis (Braun & Clarke, 2006) through theorising seeks to interpret and draw on the features specific to the transnational context which investigates a three-dimensional understanding of success and failure in Foundation Year. Any analysis needs to be framed against the guiding epistemology. In this case the social constructivist paradigm, with its beliefs that meaning and experience are socially produced, lends itself to thematic analysis, (Burr, 1995). In line with the epistemological belief system, thematic analysis in this context seeks to theorise the sociocultural conditions that frame the individual accounts. This is an important element to capture the contextual themes specific to this transnational context.

Critics question the aspect of generalisation of findings in this type of research. However, it is recognised that owing to the limited extent and

research design of the research the findings will be relatable rather than generalisable (Denscombe, 1998). The aim is not to generalise to populations, but to generate theoretical propositions and to develop a set of data that can be transferable and relevant to different contexts which facilitates understanding from multiple viewpoints. The research questions, presented in 2.13 on page 50, deal with operational links needing to be traced over time, rather than mere frequencies or incidences and a longitudinal study can facilitate this exploration. Once data collection is complete, multi-perspective thematic analysis can take place.

3.5. Building on Previous Knowledge

This research builds on the knowledge gained through the author's previous Institute Focused Study. This research looked at student and institutional perspectives of success on a transnational pre-foundation medical programme through exploring hard and soft learning outcomes, the influence of previous learning experience and transitional challenge. This small scale study found that the Medical Commencement Programme, the bridging year prior to Foundation Year at RCSI Bahrain seemed to facilitate transition and learning, but that there was a mismatch between student perceptions of success and academic achievement that was influenced by previous learning background. The study found that students entering from a second level government Arabic curriculum were more engaged in their learning, but displayed lower levels of academic achievement, whilst those from a private English curriculum background were less engaged in the learning process, but displayed higher academic achievement.

A desire to investigate academic success and failure on Foundation Year, a first-year entry stream to medical school, has created the basis for this three-year longitudinal case study into the factors impacting success and failure in Foundation Year from the perspectives of both the institution and from the students. It will be of interest to see if the elements of previous learning experience identified in the earlier study are also an impacting construct in success and failure in this higher year of study.

Of particular interest, is the generation and analysis of data pertaining to transnational western education models being delivered in a Middle Eastern context, specifically in the educational area of medicine. There is little research on the effects that the complexities of transnational education, previous learning experience and transitional challenges have on the success and failure of Foundation Year medical students specifically in the Middle Eastern context and this study aims to investigate and extend the body of knowledge on these themes.

3.6. Methodology

This is a longitudinal mixed methods case study design (2010-2013), which is explorative in nature. The use of a case study allows the capturing of 'complex and nuanced' data (Miller-Idriss & Anderson Worden, 2010) and as such allows for the collation and analyses of data regarding Foundation Year student results, student data, language, previous learning background and secondary school GPA. The research then focuses on the 2012 cohort to gather richer data through student and academic staff interviews on the perceptions of the Foundation Year experience to create a holistic, in-depth picture of success and failure in this transnational medical school context. The emphasis is on the investigation and understanding of a unique case and on the subjective, relativistic constructed world, rather than an absolute, external reality, (Burrell & Morgan, 1979; Kirk & Miller, 1986).

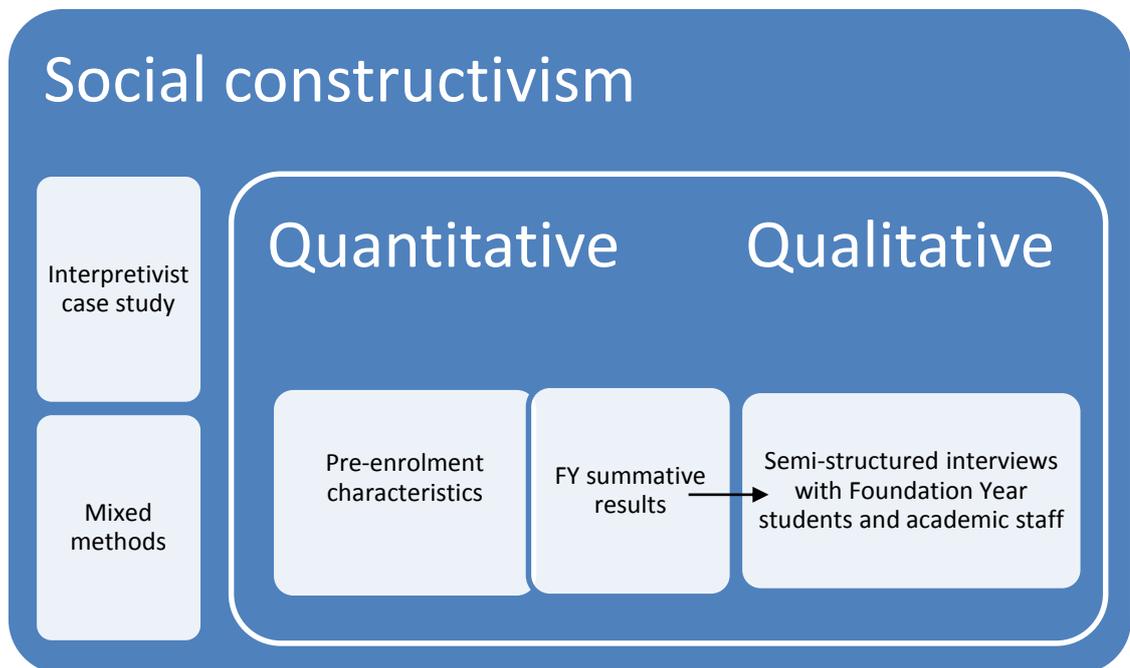
The case study, according to Creswell, is 'an exploration of a case, through detailed, in depth data collection involving multiple sources of information rich in context', (Creswell, 1998, p61). Case studies have been criticised for the inability to generalise the findings (Yin, 2009). However, the aim of this study is not to generalise the findings to populations, but to create a theoretical proposition as to success and failure in Foundation Year medical school in a Middle Eastern locality that could be relatable to similar contexts. Case studies have also been criticised for being unwieldy and creating a large quantity of data (Yin, 2009), but by developing a clear, systematic research design, control can be kept within the limitations of the design. Case studies

allow an in-depth investigation of a specific area, but by adding a longitudinal aspect to the research design, length as well as depth can be investigated. The utilisation of both quantitative and qualitative methods of data collection also facilitates depth of understanding, as well as additionally facilitating triangulation of findings. Case studies can be particularly useful in educational research where each situation is a case in its own right, but findings can be relatable to other contexts.

The research design is mixed methods, encompassing both quantitative and qualitative data. Firstly, there is an extensive examination of student pre-enrolment characteristics combined with Foundation Year summative examination results. Secondly, a series of semi-structured interviews with Foundation Year students and key academic staff takes place. It has been indicated in the literature (Zepke et al., 2011) that investigating student success and failure requires more than a single lens to uncover sufficient depth of information. Furthermore, through using multiple data collection methods there seem to be a reduction in inappropriate certainty (Robson, 1993). Hammond (2005) suggests that both quantitative and qualitative data collection methods have weaknesses and that combining the two strengthens the research design.

This research takes the form of two main parts of investigation, with the findings from one stage informing the research in the following stage. Part one identifies the background information of the Foundation Year students through considering: age; gender; nationality; interview results; English language level; previous learning experience, type of secondary school and academic attainment. Part two seeks to understand the student and academic staff perceptions of academic success and failure through a series of semi-structured interviews. The key stages of the research are exemplified in the following diagram.

Figure 7: Methodological Framework



The combination or chaining of both quantitative and qualitative methods can provide both depth of information and validity (Hartley & Chesworth, 2000). Morgan (1998b) discusses priority decisions in regard to mixed methods research, where one research strategy is the principal one, and the sequence of which method precedes the other. In terms of this study the dominant research strategy is the latter qualitative stage. The research design allows the initial quantitative data to feed into and shape the qualitative interview data. Both sets are interpreted within a social constructivist, interpretivist framework. Lincoln and Guba (1985) claim that the use of quantitative data within a constructivist framework is acceptable and that social constructivism can utilise both quantitative and qualitative methodology. Through employing mixed methods methodology, data can be investigated from differing viewpoints and through different analytical tools, ultimately enriching and triangulating findings. However, it is important that any differences in the data are critically examined to fully understand the reasons for any disparity.

3.7. Methods

Sharing commonality with other studies into failure and attrition, this study utilises a mixed methods institutional case study methodology (Roberts, 2011), gathering data through quantitative and qualitative methods. Through utilising the quantitative data of student pre-entry attributes, Foundation Year academic results together with the qualitative data gathered through semi-structured interviews, the perspectives of both the institution and students are investigated, which offers an in-depth understanding of success and failure in Foundation Year medical school. All interviews are transcribed and thematic analysis is conducted by searching across the data sets to find repeated patterns of meaning (Braun & Clarke, 2006). The constructivist paradigm allows focus on the individual context (Kuper et al., 2008b), which enables a richness of data to emerge. Interviews are a useful and flexible research tool to gain depth of information and multiple perspectives which offer the provision of rich and illuminating material. Areas to consider are the minimising of bias through pre-thought and professional integrity of the interviewer; clarity of questions - from the overall research questions, the interview questions and those that guide the thematic analysis of the data; elimination of leading responsive cues; and the provision of a non-threatening non-power relationship interview environment. In combination, qualitative and quantitative approaches create triangulation and allow exploration of complex phenomena not accessible through one research approach alone.

3.8. The Research Process

The following section outlines the steps taken in the research process. It starts with gaining ethical approval and power relationships, before moving onto the quantitative data collection of the student pre-entry attributes and Foundation Year academic results for 2010-2013. The Foundation Year curriculum and the justification for the focus modules are presented. The qualitative research process is then discussed, together with the sampling justification. Following this, the student and staff interview selected data is presented. Finally, thematic analysis is discussed.

3.8.a. Ethics

Ethical approval has been gained from RCSI Ethics Committee. Students and staff are fully informed about the research process and written consent is gained from those who wish to partake in the research, see Appendix 2. All data analysis is anonymous. This is a vital undertaking as it helps protect the rights of the participants and helps ensure reliability and validity in the research process. Levinas (1998) refers to the longitudinal aspect of ethical unconditional responsibility being that ethical responsibility cannot just be abandoned, but that the researcher has a duty to uphold this responsibility through active research and beyond. Kvale (1996) discusses the permeation of ethical issues throughout the interview, with the interviewer's ability to create conditions where the interviewee feels secure enough to talk openly being imperative. The power relationship cannot ever be completely eradicated, but by selecting students who the interviewer does not teach or directly impact on, and through establishing a secure and open atmosphere where negative comments are valued, the directness of the impact can be mitigated. A risk was that interviewees would offer only safe views. However, the views shared were open and frank and at times critical in nature, indicating that a level of security was achieved.

The researcher brings a host of influences to an interview, such as social identity and background, which can be captured under the term 'reflexivity' (Robson, 2002). Awareness of such issues and sensitivity during the interview and question selection to avoid researcher bias, assumptions and preconceptions can reduce the degree of subjectivity that is implicit within qualitative research. Additionally, through utilising the literature review to guide the research questions, selecting representative interviewees and through following a systematic approach, bias can be further minimised.

3.8.b. Quantitative Data Collection

The initial stage of data gathering is quantitative looking at the potentially relevant areas to Foundation Year academic success as discussed in 2.10 and 2.11 on pages 37 to 47. These include age; gender; nationality; prior academic achievement; previous learning; English language level; interview scores; and Foundation Year results. This data is collated from student records for the Foundation Year cohorts 2010-2013, there are 308 students in total.

Academic success is defined in the context of this research as students gaining a pass mark, which is 50% or above in each of the twelve Foundation Year modules. Students have two attempts at passing the examinations, the summative first sittings and the repeat sittings. SPSS V20 is used to carry out descriptive and comparative analysis to establish the sensitivity of Foundation Year success and failure with gathered data sets. The time period 2010-2013 has been decided on as data sets prior to 2010 are incomplete. Criticism has been made regarding the use of secondary data sets for institutional research, (Yorke, 2011). However, secondary data sets can be invaluable in guiding data and in combination with further robust data gathering techniques, can provide reliable and valid findings.

For the purpose of this research four, from a potential of twelve Foundation Year modules, are selected for quantitative data analysis. The background information on the Foundation Year curriculum and the justification for the selection of these specific four modules is now presented.

3.8.b.1. Foundation Year Curriculum

The Foundation Year curriculum is taught over two sixteen week semesters. Each semester comprises twelve teaching weeks, two weeks revision and a two week examination period. Each

semester carries sixty credits, which combined make up one hundred and twenty credits to meet the requirements of the European Credit Transfer System. Within each semester there are six modules each worth five credits, an overview of these modules is shown in the following table.

Figure 8: Foundation Year Modules

Semester 1	Semester 2
Module 1: Introduction to Medical Physics	Module 7: Chemical Processes involved in Biological Systems
Module 2: Introduction to Medical and Pharmaceutical Chemistry	Module 8: Human Systems 2- Nervous System/Special Senses
Module 3: Introduction to Human Biology	Module 9: Human Systems 3- Cardiovascular/Immune/GIT/ Excretory System
Module 4: Introduction to Disease, Diagnostics and Therapeutics	Module 10: Human Systems 4- Reproduction/Endocrine/ Respiratory Systems
Module 5: Human Systems 1- Skin/Musculo/Skeletal System	Module 11: Biomedical Laboratory Sciences
Module 6: Professionalism in Health Sciences 1	Module 12: Professionalism in Health Sciences 2

Legend

	Physics
	Chemistry
	Biology
	Human Systems
	Disease, Diagnostics and Therapeutics
	Laboratory Practical
	Personal and Professional

As demonstrated in the previous Figure 8, there are seven core subjects taught throughout the Foundation Year, these comprise: Physics; Chemistry; Biology; Human Systems; Disease, Diagnostics and Therapeutics; Laboratory Practical; and Personal and Professional. Each module is assessed

independently and all modules carry equal weighting. In order to progress to Junior Cycle, which is the academic year following Foundation Year, students must complete and pass the assessment for each module by gaining a minimum of 50%. Students have two attempts to pass their modules, the first sitting summative examinations are held at the end of the academic semester and the repeat sitting examinations are held in the summer. The science modules are assessed through a combination of short answer and multiple-choice questions, whilst the non-science modules of six and twelve are assessed through short answer, multiple-choice questions, written assignments and presentations. Modules six and twelve are designed to support non-native speakers of English through delivering the modules through two streams, an English language stream and a mainstream. The linguistic materials have been tailored to assist the students in mastering medical terminology as well as answering examination questions. The curriculum content for Foundation Year is presented in Appendix 3.

3.8.b.2. Justification for Module Inclusion Criteria

For the purpose of this research it has been decided that a sample of Foundation Year modules are investigated in the quantitative data analysis stage. This decision is based on the desire to achieve clarity of results. A reduction in module data from twelve modules down to four modules allows a clearer pattern to emerge without the distraction of noise created by analysing modules which, owing to their design and content, can distract from the core focus of achievement in the key scientific areas of Physics, Chemistry, Biology and the combined scientific module of Human Systems. The three pure science modules of module one - Physics; module two - Chemistry and module three - Biology are taken from those delivered in semester one,

to allow a picture to emerge of student performance and experience in the early weeks of their medical school education within the three core sciences. Module ten is identified as the most representational of the Human Systems modules as it comprises an almost equal distribution of Physics, Chemistry and Biology, whereas modules four, five, eight, and nine comprise an unequal distribution of the sciences. Modules six and twelve, Professionalism in Health Sciences one and two, are rejected as the streaming of students owing to differences in English language ability means that academic attainment cannot be compared. The contents of these modules are shown in the overview of Foundation Year Course book which is in Appendix 3.

3.8.c. Qualitative Data Collection

The second part of the research comprises the qualitative data analysis stage, which includes thirteen semi-structured interviews. Ten of these interviews are with Foundation Year students and three are with Foundation Year academic lecturers. The interviews take place to gain greater insight into issues of interest raised in the quantitative data analysis stage. Using a semi-structured interview format allows the participant the flexibility of response and a degree of autonomy in steering the content. A range of questions types, shown in Appendix 1, is utilised in the interviews and the list of the pre-determined questions are listed in Appendix 1. In the process of the interview, these questions are open to modification based on what the interviewer perceives is most appropriate, or the themes and direction in which the interviewee wishes to focus on. The questions take the form of open, non-leading questions as much as possible in order to minimise interviewer bias.

Merskin (2010), talks about the challenge of implementing a participatory system of knowledge generation with undergraduate

students who have experienced years of passively receiving knowledge, and the engagement of them as active partners. It is through mutual trust and communicative techniques that these bridges of communication can be built and sustained. A key aspect of communication within an interview setting is opening avenues of trust and a sense of empowering the interviewee. Non-verbal communication is an important aspect of empowerment. It is therefore important for the interviewer to appear friendly, open, interested, supportive and non-threatening. Body language, pauses and non-verbal communication, such as smiling and gestures, can help facilitate interviews and create an atmosphere where the participant feels empowered as a sharer of experiences.

3.8.d. Sampling

Purposive sampling is a judgemental process on the part of the researcher where participants are selected on the basis that they are representative of the population. In line with this sampling approach in the qualitative part of this research, ten student participants are identified who meet the criteria which appears of interest from the quantitative data analysis stage. In this case, as discussed in chapter four on pages 74 to 97 the criteria of Foundation Year results, English language level as defined by IELTS, secondary school GPA, secondary school curriculum, gender, previous learning and interview grade emerge from the quantitative data analysis as impacting factors. Although, nationality and school type do not emerge from the quantitative data analysis as of key importance, these aspects are kept in mind in the selection process, as to not exclude them at this initial stage.

There is a high degree of cooperation from the invited students resulting in a high response rate from first round selected students. In total thirteen semi-structured interviews take place. The ten 2012 Foundation Year students are selected on the basis of emerging data

from the quantitative data collection stage as discussed previously. The three academic staff members are selected from the six possible Foundation Year staff, based on a representation from each of the three key science areas, Physics, Chemistry and Biology. The data for the selected student and staff members is displayed in Figures 9 and 10 which follow.

Figure 9: Interview Selected Student Data

The following table displays data for the ten Foundation Year students who are selected for interview.

Student	Gender	Nationality	Interview Grade	FY Grade	School GPA	School Type	IELTS	MCP/Direct Entry
1	Male	Kuwaiti	3+	H1	High	Government Arabic	7	Direct
2	Female	Bahraini	3	Failed, repeating year	Medium	Government Arabic	6	Direct
3	Male	Egyptian	3+	Failed, repeating year	Medium	Government Arabic	6	Direct
4	Male	Bahraini	3	2:2	Low	English Curriculum	7	MCP
5	Female	Bahraini	3+	2:2	High	Government Arabic	5.5	Direct
6	Female	USA/Bahraini	3	Pass	Medium	American Curriculum	7	Direct
7	Male	Bahraini	3	H1	High	English Curriculum	7.5	Direct
8	Female	Bahraini	2	Pass	Low	Government Arabic	5.5	MCP
9	Female	Bahraini	4	H1	High	Government Arabic	7	Direct
10	Female	Bahraini	2	Failed, repeating year	Low	Government Arabic	5	MCP

Figure 10: Interview Selected Foundation Year Academic Staff Data

The following table presents the three academic staff data that are selected to provide a representational sample of Foundation Year staff across the three core science modules.

Staff	Subject	Nationality	Gender	Length of Service at RCSI Bahrain
A	Biology	Irish	Male	3 years
B	Chemistry	Irish	Male	10 years
C	Physics	Irish	Male	10 years

3.9. Thematic Analysis

Engagement with the literature as discussed in chapter two on pages 24 to 51 enables sensitisation to subtle features of the data (Tuckett, 2005) and raises awareness of possible expectations in the research process, which have been discussed in 2.12 on page 48. To analyse the data sets, thematic analysis following Braun & Clarke's (2006) six phase approach is applied. This recursive process involves: familiarisation with data; generation of initial codes; searching for themes; reviewing themes; defining and naming themes; and reporting on themes. As integral aspects of this process, the interviews are recorded, transcribed and are made anonymous, a sample is presented in Appendix 4. The transcribed interviews are then analysed through NVivo 10, using thematic analysis to identify and link key themes and sub-themes which emerge from the data. The results are presented and discussed in the following chapters four, five and six, which incorporate data extracts and analytical narrative, framed against the theoretical framework.

3.10. Chapter Three Conclusion

The aim of the explicit statement of methodological intent is to provide a guiding research path which is informed by the research design, the vertical

alignment of the ontological paradigm, the epistemological position, the research methodology chosen, the research methods employed and the degree of vigour utilised in analysis of the data. The aim is to gather and analyse data which provides a coherent and rich insight into success and failure in Foundation Year medical school, whilst protecting the interests of the participants. Through triangulation of data findings by looking at success and failure on Foundation Year through both the lenses of the academics and the students, together with quantitative data techniques, the findings of the research are strengthened. Additionally, the extent of the research is acknowledged through the articulation of the limitations in terms of length and depth. Furthermore, it is acknowledged that the findings are limited to the provision of a picture of failure and success in this specific institution between the given three-year time frame. The use of a social constructivist framework means that findings are non-transferable, although they can be indicative of similar institutions in a comparable context. The provision of the necessary background information regarding the Foundation Year curriculum, inclusion justifications and interview selected students and staff, creates the base of understanding to now move on to the discussion chapters.

Chapter Four

Theme One: Student Background

4.1. Introduction to Chapter Four

This chapter marks the beginning of the discussion stage of this research which incorporates chapters four, five and six. These discussion chapters take the theories of Tinto (1975, 1987, 1993), as discussed in chapter two, and presented in Figure 1 on page 25 as a guiding theoretical framework. Drawing on Tinto's theories, as well on other literature sources previously discussed on pages 24 to 51, the three chapters discuss and interpretively analyse the data emerging from the quantitative and qualitative data sets, through utilising Braun & Clarke's (2006) thematic analysis. Each of the three discussion chapters presents and discusses an individual theme and its inherent sub-themes. This current chapter, chapter four discusses the theme of student background and the sub-themes of gender, entry qualifications, interview score, English language competence and the Medical Commencement Programme. Chapter five discusses the second theme, which is cultural, family and institutional influences, with the sub-themes of cultural influence, family influence, motivation, goals and commitments, and a culture of belonging. Chapter six discusses the third and final theme which is making a successful transition. This includes the sub-themes of: a multi-faceted transition; academic culture shock; scientific fit; modes and strategies of learning; attendance; assessment of learning; learning communities; academic support; the 'state of realisation'; and social integration.

The focus in this first of the discussion chapters is on the theme of student background and academic success and failure in Foundation Year. The chapter begins by presenting a discussion on the quantitative research findings with relation to the student pre-entry attributes of age, secondary school type and nationality. Although not major identified factors influencing success and failure in Foundation Year in this specific research, these elements are worthy of a pre-discussion as they are widely discussed in the

literature and help create a background of understanding for the more notable findings that follow. Following on, the five identified sub-themes relating to pre-entry attributes and Foundation Year success and failure, which are gender; entry qualifications; interview score; English language competence; and the Medical Commencement Programme, are discussed and interpretively analysed. The findings from this chapter, along with those from chapters five and six, are used to develop a model to exemplify student success and failure in Foundation Year medical school in a transnational context that is presented in chapter seven.

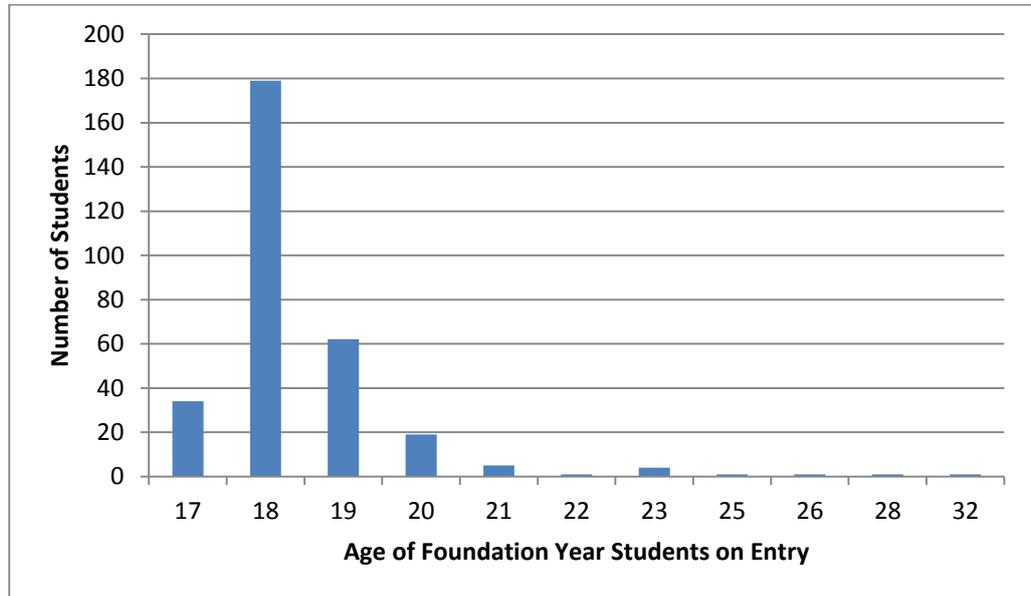
4.2. Pre-Entry Attributes

The first step in the application of Tinto's Longitudinal Model of Departure is considering what Tinto refers to in his model in Figure 1 on page 25, as pre-entry attributes and is discussed here under the sub-headings of age, school type, nationality, gender, entry qualifications, interview score, English language competency and the Medical Commencement Programme.

4.2.a. Age

Students in this transnational context, primarily pass straight from secondary school into higher education, indicating very low rates of prior third level education experience. The mean age of students entering RCSI Bahrain for the six-year undergraduate medical programme is eighteen years old and five months, shown in Appendix 5. In the 2010-2013 cohorts the youngest student is seventeen years old and the oldest thirty-two years old, only thirteen students are aged over twenty, with only four out of the three-year cohort of three-hundred and eight students being aged over twenty-three years old. This data is displayed in Figure 11 which follows.

Figure 11: Age and Number of Foundation Year Students on Entry



P value 0.16

Students generally join RCSI straight from Secondary School and are relatively homogenous in terms of age. In line with the literature in this field and displayed by the findings in Appendix 5, there is no statistical relevance shown between age and Foundation Year pass and failure rates, as demonstrated by the Pearson Chi-Square value of .016. This is perhaps not unsurprising with such a large number of the students entering medical school straight from secondary education. This in itself displays not only a trend of a largely homogenous cohort, but a cohort with very little third level educational or general life experience, which could in itself be an influencing factor in terms of assimilating into a western model of learning. The findings regarding age and Foundation Year performance are in line with those discussed in the literature in point 2.11.a on page 42, and the research expectations stated in 2.12 on pages 48 and 49.

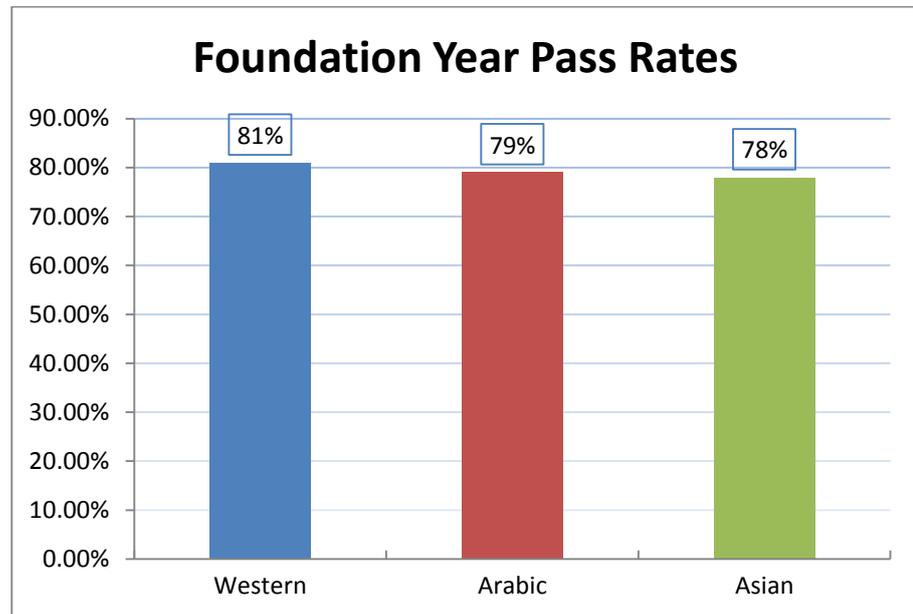
4.2.b. School Type

From the data gathered, one hundred and eighty-eight students attended private fee paying secondary schools and one hundred and three attended non-fee paying government schools. The Foundation Year failure rate of students who had experienced these two different schooling systems is remarkably similar, with 20.2% failure rate from private schools and 20.4% from government schools, displayed in Appendix 6. A Pearson Chi-Square test result of 0.972 indicates that there is no statistical relationship. This supports that there is negligible difference in performance from students who enter RCSI Bahrain from either private or fee paying schooling systems. It could be inferred from this data that economic status does not have an effect on Foundation Year performance.

4.2.c. Nationality

From the three hundred and eight students in this study group 71% are from Arab nationalities, 19% Western and 10% Asian. The Foundation Year pass rates amongst these three demographic backgrounds are similar as shown in the following Figure 12 and in Appendix 7. Western students have the lowest failure rate (19%), Arab students (21%) and Asian students (22%). These figures represent remarkably similar pass and failure rates amongst these three nationality sets. Additionally, nationality does not necessarily indicate the country in which a student lives and is educated in, as there is frequent movement between countries in this region owing to economic or political stability issues.

Figure 12: Nationality and Foundation Year Pass Rates



P value 0.817

The 2% difference in greater success from western students in comparison with Arabic nationalities and the 3% difference compared to Asian nationalities indicate very minimal differences in academic performance between these nationality groups. The literature review findings discussed in 2.11.c on page 43 indicate mixed results in relation to nationality and academic performance. In this research the findings are not sufficiently differentiated to draw any conclusions regarding nationality and academic performance. This is supported by a Pearson Chi-Square value of 0.817.

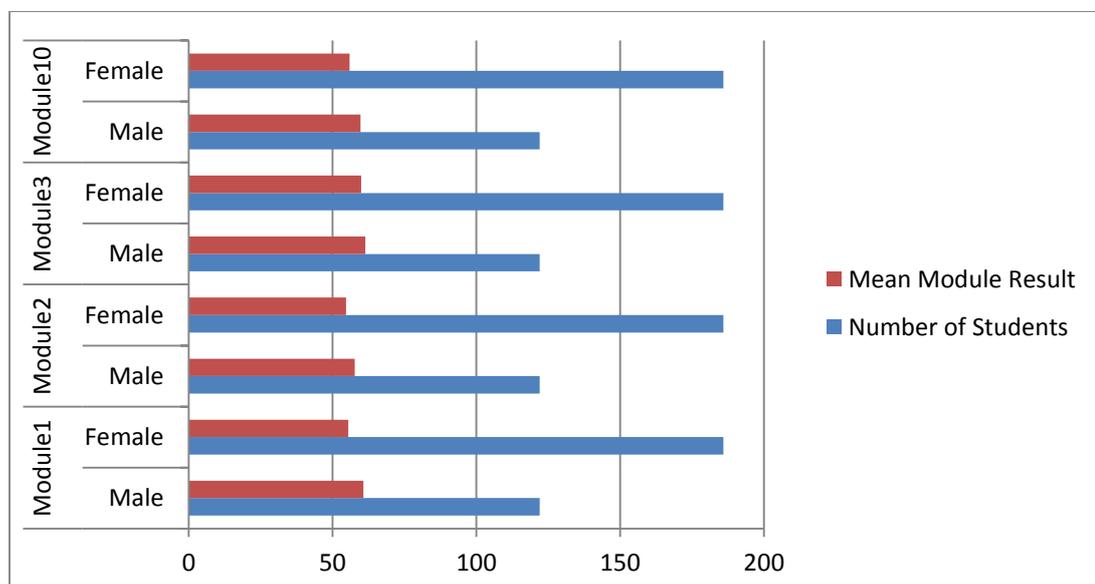
Moving on from a background discussion of findings regarding student background, this chapter now turns to the notable impacting sub-theme elements that have emerged from the thematic data analysis. These include student gender, entry qualifications, interview score, English language competence and the pre-Foundation Year of learning at RCSI Bahrain, known as the Medical Commencement Programme.

4.3. Sub-Theme 1.1: Student Gender

In the literature, female gender is found to be an indicative factor of first-year academic achievement, as discussed in 2.11b on page 43. Previous research finds that women tend to perform better than men in their medical training (McManus et al., 1986, 1996; Ferguson et al., 2000; Oggins et al., 1988; Martin et al., 2000) and throughout third level learning in general (Haq et al., 2005; Dayioglu & Turut-Asik, 2004; Catagnetti & Rosti, 2009). From a regional Middle Eastern perspective in non-medical fields, Al-Mously et al., (2012) found that females outperformed males. It is an expectation of this research that females would out-perform males as discussed in 2.12, on pages 48 and 49. However, findings from the data refute this expectation.

Over the three cohort years there are one hundred and twenty-two male students and one hundred and eighty-six female students. In contrast to the findings in the literature (McManus et al., 1996; Ferguson et al., 2000; McManus et al., 1986; Oggins et al., 1988; Martin et al., 2000), it appears that males consistently out-perform females over the modules, displaying an overall 83.6% pass rate compared to the female pass rate 76.3%. The individual module pass rates are illustrated in the following Figure 13.

Figure 13: Gender and Modules 1, 2, 3, 10 Pass Rates



Legend
Module 1: Physics
Module 2: Chemistry
Module 3: Biology
Module 10: Integrated Sciences
P value 0.124

The previous Figure 13 clearly demonstrates that males outperform females in all of these four modules after taking into account the difference in numbers of one hundred and twenty-two males and one hundred and eighty-six females. Males perform better than females in all modules, specifically in Physics 5.2% higher; Chemistry 3% higher; Biology 1.3% higher and in Integrated Sciences 3.7% higher. The detailed breakdown of male and female attainment on these module examinations is presented in Appendix 8.

Assessment type may be an impacting factor in gender differences in examination performance. The assessment type for modules one, two, three and ten are all a combination of multiple choice and short-answer questions. Al-Mulhim et al., (2012) found that overall females performed better than their male counterparts in subjective elements of assessment, but in the written component there was found to be no difference. This pattern of males performing to the same level in written exams, specifically multiple choice questions was also noted in research by Krueger (1998). Downing et al., (2008) found that males outperform females in visuo-spatial ability and mathematical reasoning. No notable differential overall in gender performance is discussed by Holmes et al., (1978), whereas in a study by Margo (1993), males outperform females in multiple choice examinations. Despite these findings, there are more numerous cases of females outperforming males in the literature and this is the more widely recognised position. An element seems to emerge from the literature of cases of similar gender performance in written assessments components and stronger female performance in subjective tests, which include much greater reliance on communication skills. This factor may be associated with higher levels of emotional intelligence. These findings of stronger female performance in communicative assessments and comparable gender performance in written written assessment might go some way towards explaining the better male

performance in these written Foundation Year examinations. An additional element may be that the subject area of gender and performance in medical school is not a well-researched construct in the Middle East (Al-Mulhim et al., 2012), leading to the possibility that there may be an impacting contextual cultural element. This could be supported by higher literacy and educational completion rates amongst males (Davies, 2012). These potential explanations need further investigation, as this marked gender performance difference is an unexpected finding when considered against the anticipated outcomes discussed in 2.11b on page 43 and 2.12 on pages 48 and 49.

The findings from this research in relation to gender are in opposition to those widely held throughout third level education in both medical and non-medical fields. Interpretations of these findings have been presented and discussed, but to gather further data and gain greater understanding of this phenomenon, which may be an anomaly of this transnational location, more extensive research is required.

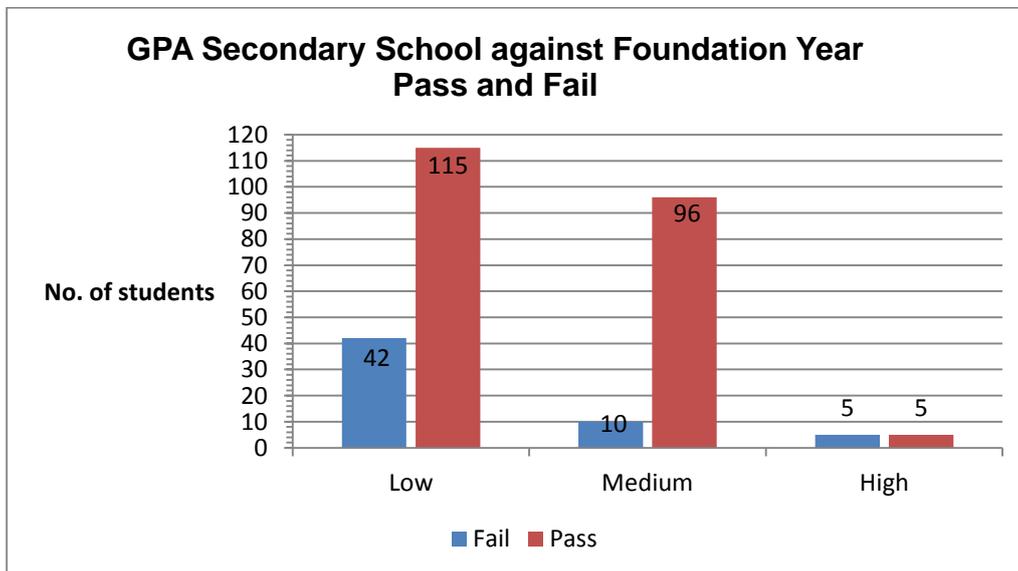
4.4. Sub-Theme 1.2: Entry Qualifications

Prior academic attainment is an important factor in Tinto's theoretical framework, as discussed in 2.2, on pages 24 to 27, and also within the wider literature regarding success and failure in first-year learning as discussed in 2.11.d, on page 44, (Arulampulam et al., 2004b, 2007; Gough et al., 1975; Powis et al., 1992; Strayhorn, 1999; Urlings-Strop et al., 2009; Ward et al., 2004; Willoughby, 1981; Neame et al., 1992). It is a stated expectation in 2.12, on pages 48 and 49, that prior academic achievement is anticipated as being an indicator in first-year third level learning success. This research supports these findings.

Students enter university holding a range of secondary school qualifications, especially in a transnational context where students enter from numerous secondary school systems. The main secondary school certificate curriculums followed by Foundation Year RCSI Bahrain students comprise Government Arabic Curriculum (31.5%); American Curriculum (22.4%); A-level (14.3%)

and IB (15.9%). In order to better compare this variety of secondary school curriculum and certification types a band system was created; this comprised of low, medium and high entry bands, which considered secondary school GPA to comparatively analyse Foundation Year performance from these different entry streams. In the case of this study, a marked increase in passing students is noticed in line with higher entrance criteria. Amongst the low to medium bands, there is an improvement of pass rates from 73% in students classified as having lower entry requirements, to 91% in those holding what are classified as medium level entry requirements. However, this pattern was not apparent in the higher category; an explanation for this may be the small number of ten students in the higher category, compared to one hundred and six in the medium and one hundred and fifty-seven in the low category. This data is shown in the following Figure 14 and in Appendix 10.

Figure 14: Secondary School GPA Band and Foundation Year Pass and Fail Rates



These figures alone indicate that in general few students enter Foundation Year with what are considered 'high secondary school qualifications'. This should raise an area of concern, as the indication is that a large number of students enter RCSI Bahrain with relatively low entrance criteria. Qualifications on entry to medical school are seen within the wider literature

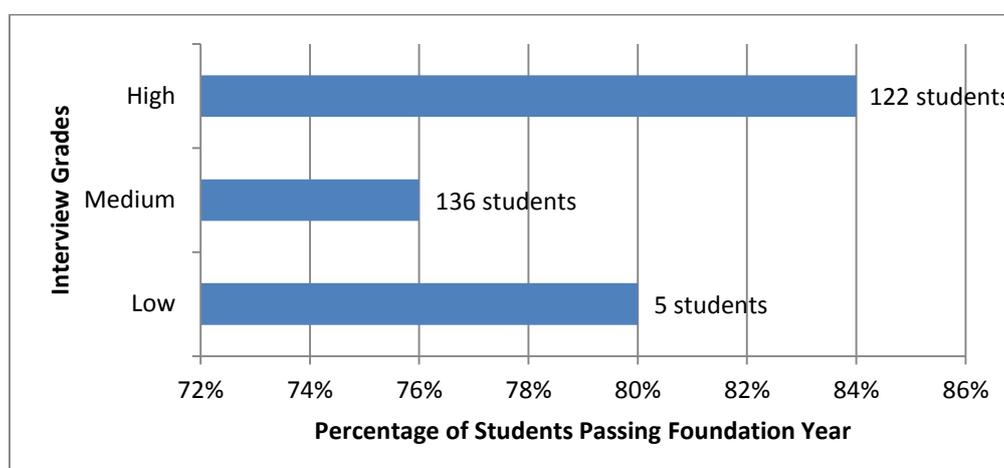
as being associated with success and failure (O'Neill et al., 2011), with lower entry qualifications having been linked to poorer performance in medical school (Ferguson et al., 2002) and also with higher attrition rates. These findings from the data support those from the literature in 2.11d on page 44 and with the research expectations in 2.12 on pages 48 and 49. The overall trend seen in 97% of the students indicates a relationship between achievement at secondary school and achievement in Foundation Year medical school. It supports the importance of higher entry qualifications as a leading criterion in the selection of medical students and in the resulting Foundation Year results.

4.5. Sub-Theme 1.3: Interview Grade

From the three hundred and eight students, interview scores were available for two hundred and sixty-three. From this incomplete data set, the interview results are banded into three categories on a five-point scale to enable a clearer picture to emerge from the data. A scale of one to two represents a low score; three, a medium score and four to five a high score. From this categorisation five students achieved a low score, one hundred and six a medium score and one hundred and twenty-two a high score as illustrated in Figure 15 on page 84.

It would be expected in line with discussions in 2.11g on page 47 that the higher the interview score, the better the Foundation Year academic performance, (McManus & Richards, 1986; Murden et al., 1978; Lazin & Neumann, 1991; Powis et al., 1992; Calkins et al., 1987; Hall et al., 1992; Meredith et al., 1982; Elam et al., 1997). The findings from this analysis indicate that there is a positive relationship between the pass rate in Foundation Year with the interview score in the interviews amongst 98% of the students as shown in the following Figure 15 and in Appendix 11. However, this relationship is not found to be statistically relevant according to the Pearson Chi-Square test findings of 0.221 shown on page 234.

Figure 15: Interview Band Categorisation and Foundation Year Pass Rates



P value 0.221.

A positive relationship is an expectation of the research findings as discussed in 2.11g and 2.12 on pages 47 to 49. However, amongst the five students who make up the remaining 2% in the lower category there seems to be a discrepancy, which could be explained by the very small number of students. Additionally, it could be explained by poor inter-rater reliability in terms of the interviewers and the process. This is a factor discussed in the literature as impacting the accuracy of the selection process, (Elam & Johnson, 1992).

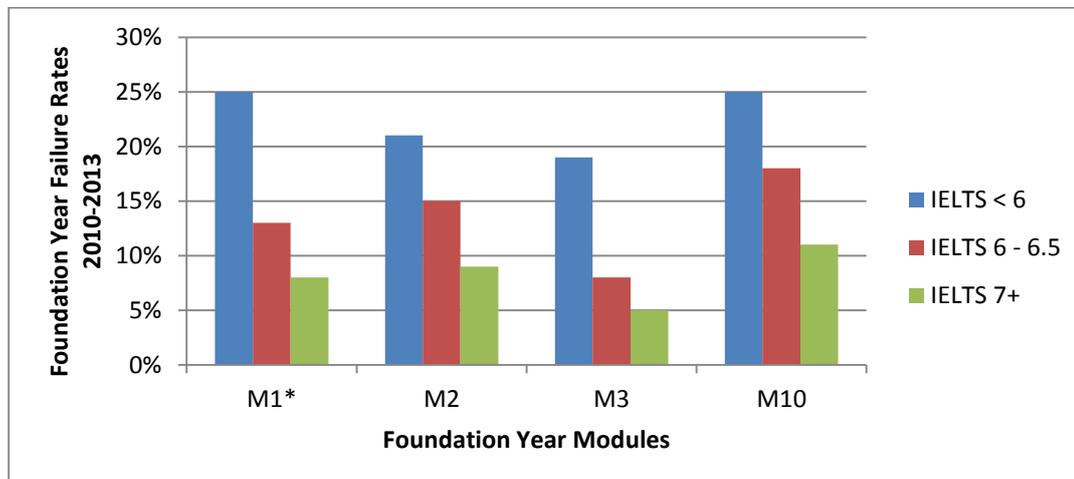
4.6. Sub-Theme 1.4: English Language Competence

Of the all the pre-entry attributes examined, it is the level of English language on entry, which appears to be most significant in terms of students passing or failing the Foundation Year. This is a key finding in this transnational medical school context as language ability and acquisition is both a complex, yet core factor in the transnational learning context. The complexity lies in the different language abilities that students enter with, which can be traced back to their previous educational and cultural experiences. Students make many references in the research interviews to the influence of English language on success and failure in Foundation Year. These student insights are presented in this discussion. The first part of the discussion on English language

competence focuses on the analysis and corresponding discussion of the quantitative data. It then moves on to the richer and multi-dimensional insights provided by the qualitative data on this sub-theme.

For comparative purposes students were categorised according to low, medium or high language ability based on their International English Language Testing Score (IELTS) score: less than IELTS 6 was categorised as low; 6 - 6.5 IELTS as medium; and IELTS 7+ as high. English language entry into medical school in the western context is usually set at a minimum of 6.5 IELTS, so this transnational setting does admit students with substantially lower English language levels; currently this minimum is set at 5.5 IELTS. The effect of lower English language ability on Foundation Year results in the four focus modules is shown in Appendix 12 and in Figure 16 below.

Figure 16: Comparison of Failure Rates against IELTS Score in Modules 1, 2, 3, 10



Legend
 Module 1-Physics * P value 0.024
 Module 2-Chemistry
 Module 3-Biology
 Module 10-Combined Sciences

Figure 16 shows that there is a noticeable trend linking the English language level of students with their academic performance in the focus modules of Physics (M1), Chemistry (M2), Biology (M3) and Integrated Sciences (M10). The results clearly demonstrate that the higher the student English language

level, the better performance in these modules. The Physics module (M1) is shown to have a P value statistical significance of 0.024; the other modules, although not displaying statistical significance, do show a significant trend. This finding is important as it shows that the move from learning science through Arabic towards learning it through English has a marked impact on academic achievement.

English language emerged through the qualitative data as being a reoccurring and broad reaching theme, which arises frequently throughout the interview process. It is for this reason that the discussion on English language now incorporates qualitative data to illustrate this theme. The background data for the students selected for interview can be referred to in Figure 9 on page 71.

No matter how good a student's general English is, if they have learned science through another language, there is a transition period, which is needed to learn the scientific terminology through English. Students particularly noted language difficulty on joining the Foundation Year, which became incrementally easier as time passed. The following student's improvement in English language, despite an initial low competency in English, is demonstrated in her achievement of a second-class honours grade. This indicates that language adaptation is an important part of the transition process.

First I found the difficulty but I used to learn the terms first and with practice it becomes easier for me. Student 5: Foundation Year 2:2 Grade; IELTS 5.5.

There also was recognition of the importance of Foundation Year in facilitating the transition from one scientific language to another. This factor is discussed by the following student, whose first class honours grade demonstrates her successful transition and academic attainment.

Even if you know how to speak English, your scientific language is not English. I can talk to you a long time in English, but the problem is my scientific

language. That's why Foundation Year is important. Student 9: Foundation Year H1 Grade; IELTS 7.

Adjustment from learning through one language to another is not an inconsequential event. It requires a paradigm shift even in students who enter with what is considered to be a high level of competency in English language. This is exemplified in the reference below, in which this student considers the complete rejection of knowledge in one language in favour of re-learning through English.

So what I did was to forget everything I learned in Arabic and started learning everything in English. Student 1: Foundation Year H1 Grade; IELTS 7.

Students also discuss the amount of time needed for translation and the added stress this can add to the transition period. Ultimately, the time required to complete their studies is extended and some students are unable to persist with this strategy. This transition from learning through one language to another seems to be a faster process in a student entering with higher English language competence. In the following case, the student states he gave up on his initial translation strategy owing to time constraints, but clearly did not struggle as a result, as displayed by him gaining a first class honours grade. The ceasing of implementing translation strategies may also mark the end point of of an aspect of transition, when second language science knowledge becomes sufficiently active.

I translated every single word, but for me I kind of gave up on that because it was taking a lot of time. Student 1: Foundation Year H1 Grade; IELTS 7.

Just as the various degrees of translation challenge exist, so too does the perception of difficulty of the challenge. The reality of this challenge is not necessarily in-line with student expectations held before starting medical school, as demonstrated below.

Actually my weakness is like Chemistry, I studied through French, so I didn't know it in English. I knew it was going to be hard but I didn't know it would be this hard. Student 6: Foundation Year Pass Grade; IELTS 7.

The following student makes reference to learning science through English and to the importance of moving away from translation in order to facilitate vertical progression through medical school and support learning in the Junior Cycle, which is the year of learning that follows Foundation Year. It is perhaps notable that it is a high achieving student with higher language ability who perceives the insight of recognising the importance of a shorter translation transition period and of establishing study strategies to facilitate long-term learning.

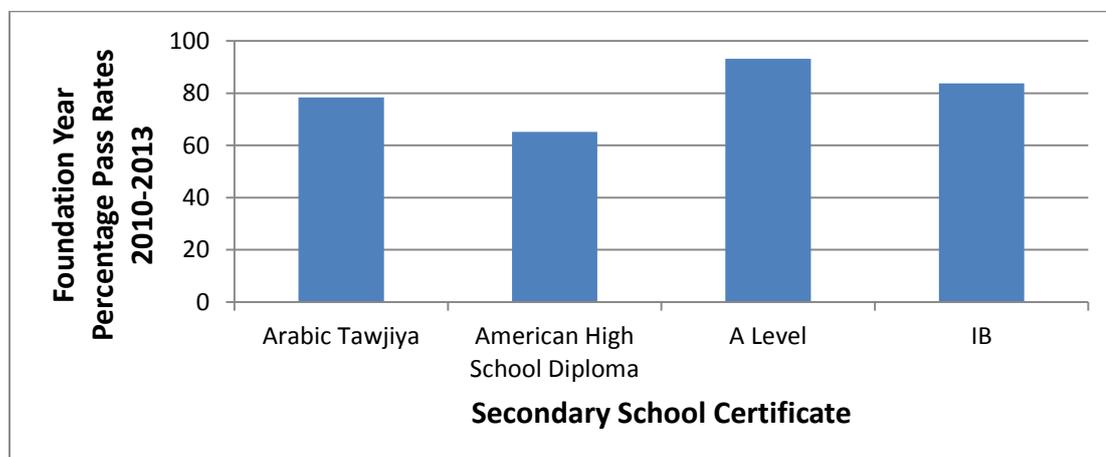
If you translate stuff in Junior Cycle and further on, it's going to be very difficult. Student 1: Foundation Year H1 Grade; IELTS 7.

Students faced with learning through a new language medium draw on learning strategies at their disposal, and it appears through applying thematic analysis that students widely utilise translation to aid their move from learning through their first language towards learning through a second language. Translation appears to be employed by many students, even those who consider themselves to have a good level of English language. The following student raises the point that even very high achieving students at secondary education level face this translation issue. It is clear that students who enter RCSI whose first language is not English face translation issues to various degrees of complexity in their first-year of learning.

I was going really good in my High School and most of the subjects we did especially in the first semester in Foundation Year was just like school. Now what I have to do is translate. Student 9: Foundation Year H1 Grade; Arabic Government School; IELTS 7.

The wide variety of secondary school experiences feeding into transnational medical school means that inevitable some secondary schools curricula dovetail more smoothly, especially those of a western origin, such as A-level and IB curricula. Figure 17, below and Appendix 9 illustrate the higher Foundation Year success rates from students following the more contiguous European curriculums of A-Level and IB. This is supported by the Pearson Chi-Square test result value of 0.009 shown on page 232.

Figure 17: Secondary School Certificate Type and Foundation Year Pass Rates 2010-2013



P value 0.009

Others, including the Arabic Government schools' curriculum, seem to have a high level of scientific curriculum fit (Leksandar-Hayes, 2013), as discussed in point 2.10 on page 37, but the challenge comes when students face having to relearn what they already know in a second language.

I am good with English. I'm fine, but when it comes to the medical terms and all that, we didn't take that kind of English at school. I have to translate things and I have to go through them to make sure I understand what this is because the information that we are taking here, we took in school, but it was in Arabic so we have to translate. Student 2: Repeating Foundation Year; IELTS 6.

An additional element in the comments of the previous student is that her high self-perception of her English language level does not correspond with the low IELTS grade that she achieved. This draws in the argument of the 'paradox of failure' (Perry et al., 2005), as discussed in 2.10 on page 37. This mismatch in self-perception and academic attainment is illustrated in her failing Foundation Year in the previous academic year and the current need for her to repeat the year.

The cornerstone of a students' experience can be their previous learning. In the case of the following student it is science learned through Arabic, which is returned to like a touchstone of security in that difficult transitional period.

My scientific knowledge at school helped me in those first weeks when I didn't know what to do. Student 9: Foundation Year H1 Grade; Arabic Government School; IELTS 7.

When students flounder they return to what is known, whether this is language, knowledge or attitudes. Stepping into the world of transnational education is not without its difficulties and for the transition period students may well display behaviour that fluctuates between the old and reassuring and the new and challenging.

The challenge of language is further complicated by the finding that secondary school English language curriculum students perform to the same overall level as the Arabic language curriculum students in Foundation Year, both displaying a 79% pass rate as illustrated in Appendix 13. The English language curriculum students are a combination of those following the American secondary curriculum, the IB and A-levels curriculums as presented in Figure 17 on page 89. This finding is explained by high numbers of native Arabic speakers moving to American English language curriculum secondary schools, but failing to attain high levels of English language ability as demonstrated through their IELTS scores. The relevance of language then appears to be the IELTS score on entry and not the language curriculum of

the secondary school experience. As discussed in 2.11.e on page 45 and 46, IELTS appears to be a good indicator of language ability and from this research it appears that it is the IELTS score that correlates with Foundation Year achievement.

English language ability is part of a wider issue of fit as discussed in 2.10 on pages 37 to 42. It comprises what Van de Meer et al., (2010) term as being sufficiently prepared for university. The statistical and qualitative findings from this discussion clearly show that many students are insufficiently prepared in terms of their English language, and this deficiency is sufficiently serious that it is an evident factor in the Foundation Year failure rates. Despite approximately 63% of students entering from an English language curriculum secondary school experience, they do not necessarily have a high level of English capability to seamlessly transition from science at school to science at medical school. The findings support the literature discussions in 2.11.e on pages 45 and 46, together with the research expectations stated in 2.12 on pages 48 and 49, which stated that English language level would be an impacting factor in academic success in Foundation Year.

4.7. Sub-Theme 1.5: The Medical Commencement Programme

Falling under Tinto's pre-entry attributes as discussed in 2.2 on pages 24 to 27, under the sub-heading of prior education, is the fifth sub-theme which is the Medical Commencement Programme. The Medical Commencement Programme was introduced at RCSI Bahrain in 2011, and only eleven of the three hundred and eight students in the quantitative stage of the research have followed this programme. Three of these students are selected for interview, whilst the remaining seven students are direct entry students, as shown in Figure 9 on page 71. Despite these small student numbers, frequent references in the interviews to the role of the Medical Commencement Programme, not only in English language support, but also in a broader preparatory provision identify it as a sub-theme.

The Medical Commencement Programme, as discussed in 3.5 on pages 60 and 61, is a one-year pre-foundation preparatory course that is designed to bridge the gap of learning from secondary school towards the Foundation Year. Students enter the Medical Commencement Programme when they narrowly miss the entrance criteria for Foundation Year in either the sciences or English language. The Medical Commencement Programme curriculum incorporates basic sciences, medical terminology, study skills, and English language for medicine for those with lower levels of English language ability, or basic research skills for those with higher levels of language competency. The three interviewed students who experienced the Medical Commencement Programme made extensive reference to it, namely in the areas of: supporting language transition; preparation for lecture learning; vertical preparation and allowing students time to socially, as well as academically, transition into the Foundation Year.

Language and terminology preparation for Foundation Year is seen to have been provided by the Medical Commencement Programme as discussed by the following student.

For me when I entered this college I can't understand or speak English. When I go to the Medical Commencement Programme I improve my English and my knowledge and also terminology, because before this, it was all in Arabic and I didn't know anything about terminology in English. Student 10: Repeating Foundation Year; IELTS 5.

The next student, who has previously followed the Medical Commencement Programme, draws attention to being supported by a Medical Commencement Programme academic member of staff to move away from translation towards studying solely through English. She notes that direct Foundation Year entry students, who do not experience the same level of transitional support, rely on time-consuming translation.

On the Medical Commencement Programme I used to translate but then Dr E taught me how to study without translating so the Foundation Year was fine because I didn't translate anything. I notice that when they come direct to Foundation Year they are translating a lot of words, this way they waste a lot of time. Student 8: Foundation Year Pass Grade; IELTS 5.5.

This student's experience of academic advice and support enables her to move away from translation and enter the Foundation Year without having to implement this time-consuming strategy. She achieves this despite her particularly low English level as demonstrated by her IELTS 5.5 score. The same student, Student 8, goes on to discuss her perception of the importance of learning science through English in the Medical Commencement Programme, emphasising a benefit of the Medical Commencement Programme in providing suitable language support strategies.

Because I take the Medical Commencement Programme I don't have English problem, but if I come direct to Foundation Year with no Medical Commencement Programme I would have a lot of English problem. Student 8: Foundation Year Pass Grade; IELTS 5.5.

Despite her clear articulation of the message of the importance of the Medical Commencement Programme, it is also apparent through her syntax usage that some gaps still exist in her English language accuracy. Perhaps the language gap from her 5.5 IELTS on entry has not been fully bridged and may play a role in her achieving a pass, rather than a higher honours grade in her Foundation Year.

The Medical Commencement Programme is also seen to be important in terms of preparing the students for the way of studying, as in the case of the following student who went on to successfully pass Foundation Year.

For me the preparation from the Medical Commencement Programme was great because I learned how to study. Student 8: Foundation Year Pass Grade.

The introduction to the modes of learning and getting used to lecture style learning in a gradual manner is made reference to by the following Student 10.

In the Medical Commencement Programme it was lecture by lecture every day and I can concentrate and study easy. Student 10: Repeating Foundation Year; IELTS 5.

The Medical Commencement Programme is seen to vertically prepare students towards Foundation Year and develop expectations towards their next level of learning.

We had a couple of lectures on the Medical Commencement Programme, they encouraged us to go to Foundation Year lectures and I think we were aware of what we should expect in the year to come. Student 4: Foundation Year 2:2 Grade; IELTS 7.

Student 4 continues to talk about the learning cycle that is formed by secondary school, the Medical Commencement Programme and Foundation Year, with them all providing learning steps for the next stage.

The way I see it High School prepared us for university, the Medical Commencement Programme reinforced what we learned in High School and also added to what we knew from High School. In Foundation Year it was like we had the basic knowledge that we needed to make the year easier on ourselves. Student 4: Foundation Year 2:2 Grade; IELTS 7.

Social integration, a stated component of Tinto's Longitudinal Model of Departure, shown in Figure 1 on page 25, is an aspect raised by the following Student 4. This student highlights the time needed to find a balance between academic and social aspects of university life.

I guess the advantage was that I felt that I had was basically experienced in university life like I wouldn't tend to waste my time as I did in the Medical Commencement Programme because I've been around. If I was if Foundation Year I would have spent more time focusing on my social life rather than my schoolwork, but because of the Medical Commencement Programme I got that out of the way and went straight to Foundation Year, having gotten over that and focused. Student 4: Foundation Year 2:2 Grade IELTS 7.

The above student makes reference to having gained university life experience in the Medical Commencement Programme and the opportunity this provided to allow time for developing when the pressure of work was not as intense as it is in the Foundation Year. This shows that no matter what the first-year of learning is at third level education, students need time to adapt. The provision of a bridging year such as the Medical Commencement Programme facilitates this adaptation, allowing students space to transition.

Overall the Medical Commencement Programme is seen as laying appropriate foundations for learning and academic success at Foundation Year level.

When I looked at other Foundation Year students I felt they had gaps where I didn't because of the Medical Commencement Programme. Student 4: Foundation Year 2:2 Grade; IELTS 7.

The Medical Commencement Programme is clearly viewed by students as a stepping-stone in their learning journey that provides appropriate scaffolded learning to support their Foundation Year experience. Despite this positive evaluation as to the appropriateness of the Medical Commencement

Programme in facilitating transition from secondary school to third level learning, only two of the three students interviewed passed the Foundation Year, one is currently repeating. Perhaps notable is that Student 10, the repeating student, entered the Medical Commencement Programme with the lowest English language ability of the three, holding an IELTS score of 5, see Figure 9 on page 71, indicating the vital role of English language as discussed in 2.11.e on pages 45 and 46, in managing a successful transition.

4.8. Summary of Chapter Four

Previous learning experience clearly impacts academic performance on the Foundation Year, with the factor with the most impact being English language ability measured by the IELTS examination as discussed in 4.6. Insufficient English language competency leads to a reliance on translation, which appears to be a marker of transition in the transnational context. English language competency as measured by IELTS, and its impact on Foundation Year learning is a key finding of this research on success and failure in Foundation Year in this transnational context.

Higher entry qualifications can be linked to better academic performance through the low and medium bands, but a very small group of students in the higher band led to mixed findings, as discussed in 4.4. However, it can be generally inferred that in line with the literature and research expectations that there is a relationship between higher secondary school qualifications and Foundation Year performance.

Students, who experienced the Medical Commencement Programme, as discussed in 4.7, benefit from this bridging year of learning and enter Foundation Year feeling that they have already passed through their transition period, although the impact of lower English language level can be carried through the Medical Commencement Programme and into Foundation Year.

Interview grades, as discussed in 4.5, indicate an increased pattern of higher performance when moving from the lower to middle category, but mixed

findings were apparent in the high category, possibly owing to the very small number of students. This indicates two findings, the first being that there is a general increase in Foundation Year performance that displays a trend of an increase in interview grades. The second point is that there are only a small number of students in Foundation Year who could be classified as holding high-level secondary school qualifications.

Fit and the impact this has on transition, is a factor that is influenced by previous learning experience, with some curricula, particularly European models of secondary education providing a more appropriate fit as shown in Figure 17 on page 89. Student age, private and government secondary school type and nationality; do not appear to be factors which impact academic performance.

An unexpected but key finding from this research, is that male students perform both better overall and in the focus Foundation Year science modules. This raises an interesting finding that challenges the generally held perception that females outperform males that is discussed in the literature review in 2.11.b, on page 43. Cultural contextual factors and assessment type are possible influencing factors on better male performance in Foundation Year. However, it is necessary for further research to be carried out to gain greater insights into this unexpected finding. The research now moves on to the next chapter and the second identified theme.

Chapter Five

Theme Two: Cultural, Family and Institutional Influences

5.1. Introduction to Chapter Five

A myriad of influences prevail on the transnational student. In the case of RCSI, for many students the move from an Arab school learning experience to a western third level experience creates a range of challenges, many of which are hidden to the western eye. Intrinsic to a student's whole previous learning and living experience are deeply influential factors that stem from, and are embedded in, cultural and family roots. These influences impact the motivations, goals and commitments of the transnational student in a silent, but unwavering manner. Within any academic institution there exists an institutional culture that shapes how students perceive the institution, how students feel about themselves as learners and how learners develop into the professionals of the future. This discussion chapter draws on the qualitative interview data gathered from the ten students and three academic staff outlined in Figures 9 and 10 on pages 71 and 72. It sets the background for discussions which follow through presenting the emergent sub-themes of: cultural influence; family influence; motivation; goals and commitments; and a culture of belonging. These aspects are framed against Tinto's Model of Longitudinal Departure as discussed in 2.2 on pages 24 to 27.

5.2. Sub-Theme 2.1: Cultural Influence

Culture has an influence on learning that is not fully understood. It comprises a host of different and unrelated aspects and together they create a complex mix that transnational education, as discussed in 2.7 on pages 31 to 35, has not fully realised. Students enter transnational education from a wide range of entry streams and on entering a western model of education undergo a period of acculturation; this is a process that according to Koehn (2006), contemporary medical-school curricula and continuing education have not kept pace with. Amongst the cultural influences that can impact Foundation

Year students are those that shape their family lives, ways of learning, and patterns of social interaction. Entering medical school is not just a matter of negotiating new curriculum content, it involves a range of personal and affective aspects (Marton & Booth, 1997), including gaining confidence; changing attitudes; increasing critical awareness; and developing scepticism - all of these aspects are influenced by cultural factors. A student's belief systems, that stem from their cultural roots, 'play a significant role in their learning and motivation in the classroom' (Mohamed, 2014 p48). Despite this noted impact, there is a rarity of research on epistemic beliefs in the Arab culture. Notable aspects of cultural impact on learning in Arab students mentioned in the literature are those of the collectivist nature of Arab society, together with the great need for affiliation, (Meleis, 1982) and the integral influence of '*kibriya*' (Weir, 1994 p948), which translates as status, position, grandeur and majesty. Any threat to an individual's *kibriya* causes 'loss of face', which is culturally abhorrent within the Arabic world and can effectively cut any communication and learning that might have been taking place.

Mahoney (2014) argues that the most challenging aspects of transnational education are connected to culturally related issues such as communication styles and learning styles. Eaves (2011) discusses learning styles as being existent, but problematic and misunderstood, with transnational students bringing a variety of strengths associated with a different skills set to their learning. This recognition that students with various cultural backgrounds bring different study skills, rather than what may be perceived as a lack of study skills (Sangoor, 1998; Shirawi, 1989), raises the possibility that the transnational student is little understood when entering a transnational institution and underlines the western centric approach to transnational education. The following student raises the aspect of better understanding being offered in the transnational context through an academic staff member in the first-year experience, who shares a commonality in cultural background. Through this the student perceives a communication of greater understanding.

I have never spoken to him about things other than university, but I find his background really close to my background, so we kind of understand each other. Student 3: Egyptian Nationality.

Cultural influence is frequently not an aspect that individuals are consciously aware of, but it plays an implicit role, silently shaping many aspects of the transnational student experience.

5.3. Sub-Theme 2.2: Family Influence

Family influence in the Middle East is a major guiding factor, with parents taking a more active role, particularly in the beginning of their child's academic career, than can be seen in the West. Affiliation is a leading concept that guides an Arab student with an intrinsic need to share and be guided by family and friends (Meleis, 1982). The family unit is highly influential in the Arab world, with parents wielding the power in many cases to dictate careers and marital unions. This raises the question of how institutions can suitably respond to this cultural difference in terms of informing, engaging and drawing the line between familiar support and over-parenting, particularly as the western model of transnational education follows the rules of confidentiality between student and institution and requires the student to step into independent, adult learning shoes.

With the culture here because family is very important, I guess as RCSI academic staff you are almost an extended version of family, you are someone taking care of the students. They are in groups being ushered and minded and watched, told what to do, a little bit parental, so I think that's something that is important, and again at the start of the first semester, to be able to nurture that, I think that could be improved. It might improve the overall experience of the students. Staff A.

Parents need information and especially so if they are to financially support several years of medical school and its associated fees. This information

though needs to be culturally appropriate and delivered in an accessible manner. Making parents aware of support services can help close gaps in the safety net and facilitate 'at risk' students being redirected back to institutional support. Meleis (1982) discusses the Arab cultural need for high contextualisation and affiliation and an associated total sense of involvement being needed when communicating or delivering a message. For this reason communication is deemed much more effective when delivered as a verbal message.

Thomas (2012) shows that students are more likely to turn to parents than friends for advice when considering withdrawing, although in the case of academic failure it is common that shame prevents students from being initially honest, particularly with their parents. This is an aspect of the reticence for students to bring shame on their families and is related to the culturally influenced aspect of 'losing face'. This aspect can further complicate the issue of failure, with internal as well as external struggles marking the path towards what will later be discussed in 6.10 on page 137, as the constructed term of the 'state of realisation'. This is the point at which a student recognises that they are struggling and embrace learning advice and strategies. This 'state of realisation' is essential in order for changes in attitude, and action to occur.

5.4. Sub-Theme 2.3: Motivation

Student motivation in this transnational Irish medical school is intrinsically linked with culture and family influences.

It was just something that my dad always wanted, that's why I'm doing it.
Student 1: Male; Kuwaiti Nationality.

High levels of personal desire are invested to this end,

It's very important. It's my life. Student 7: Male; Bahraini Nationality.

It is commonly quoted from interview and beyond as being a childhood dream.

It was my dream to become a doctor. Also my uncle is a doctor, so I want to be like him. It is also one of my father's wishes. Student 3: Male, Egyptian Nationality.

Graduating as a medical doctor carries high levels of societal kudos in the Middle East and it is viewed as being one of the most highly respected careers that is chosen by, or chosen for an individual. The motivation to achieve this dream commonly stems from wishing to please the family.

It is my dream and also I want to do something that my father is proud of me, so he can say 'this is my daughter and she deserves to be a doctor'. Student 8: Female. Bahraini Nationality.

Personal motivation can be a factor, but again this is frequently linked to the family's wishes.

It's 50% me, and 50% my parents to be honest. Student 6: Female; Bahraini Nationality.

The desire to meet the expectations of their families appears to be shared by both male and female students, as shown in the previous comments, with no differentiation apparent between the genders. High levels of extrinsic motivation as a driver, such as the desire to meet family expectations, can result in problems when students are faced with failure. This type of extrinsic motivation is linked to a student desiring the long-term advantages, qualifications, social kudos and job prospects, in this case as a medical doctor (Hull, 1943; Mowrer, 1950; Rosen, 1956). Skinner (1968) has stated that these types of long-term rewards provide limited and unsustained motivation, unless combined with a more immediate reward such as academic success. So with high degrees of pleasing others as a motivational driver, when faced with failure, students not only struggle with their personal disappointment, but

with their family's, their sponsor's and in some cases these feelings broaden to encompass their society.

It's not for me of course. I am doing it for my society. Student 9: Bahraini Nationality.

In times of trouble, extrinsic motivation is not as robust as intrinsic, lacking innately supportive features (Bruner, 1966) and leaves students floundering in uncertain waters, with few inner support systems.

5.5. Sub-Theme 2.4: Goals and Commitments

Intentions, as shown in Figure 1 on page 25, are defined as goals; educational, occupational or intrinsic, whilst commitments are the willingness to work towards the goal, these are impacted by past experiences and the individual's personality (Tinto, 1993). Students enter university with an expectation that they will change and develop and are in a responsive and receptive state to meet the requirements and challenges of third level education. However, in order to deal with the results of academic culture shock students can adopt an instrumental approach to their studies and their main preoccupation becomes negotiating the next set of assessments.

Students join medical school on a high, they have achieved their dream and their families dream, they have achieved high levels of academic success at school and so are unprepared for any form of failure. The excitement and enthusiasm is almost palpable in the first few days.

Students come in the first week, they are very, very excited to be becoming a surgeon, a cardiovascular surgeon and they want to be cutting bodies and out there with their scalpels. We can lose that within a couple of weeks, we can lose that enthusiasm and they settle back in, some of them get relaxed and less motivated and I think we need to capture that and keep that. Staff A.

Very quickly this enthusiasm dissipates, this point is the first 'at risk' period. Thomas (2012) refers to another 'at risk' period being before and after Christmas in the first-year of learning. This in a transnational context should be viewed with a culturally sensitive eye and consideration should go towards whether 'at risk' times would be around Eid holidays, where students travel and focus on family to the possible detriment of their studies. These 'at risk' periods can exacerbate simmering issues and in struggling students mark a downward slide.

Thomas (2012) discusses links between a student's positive perceptions of self-efficacy as opposed those who doubt their own abilities. She concludes that those students who express doubt are almost twice as likely to not progress as non-doubters; also doubters reported low quality experience and poor interactions with academic staff. This would indicate then those students who express feelings of doubt should be categorised as 'high risk' and be responded to in a timely manner. These doubters are also reported as being less confident and less likely to understand the differences between second level and third level education. This is an element that indicates that a student has not reached what is discussed in 6.10 on page 137, as having reached the 'state of realisation'.

5.6. Sub-Theme 2.5: Culture of Belonging

Within any academic institution there exists an institutional culture. It is this culture that dictates and forms the guidelines for all forms of interaction with the student body. It shapes students perception of the institution, how students feel about themselves as learners and how learners develop into the professionals of the future. A culture of belonging can bridge differences in individual cultural backgrounds and create a suitable environment for an effective learning community to develop.

Belonging refers to a student's subjective feelings of connectivity with an institution, personal acceptance and respect. Support by institution and peers characterise an individual's sense of belonging and Goodenow, (1993b p25)

links this to feelings of self-value, personal recognition and personal autonomy.

‘Students’ sense of being accepted, valued, included, and encouraged by others (teachers and peers) in the academic classroom setting and feeling oneself to be an important part of life and activity of the class. More than simple perceived liking or warmth, it also involves support and respect for personal autonomy and for the student as an individual’.

The roots of a culture of belonging at educational institutions can be traced back to Bourdieu & Passeron’s (1977) theories on cultural capital and habitus. Cultural capital relates to ways of speaking, interaction and behaviour, which stem from interactions with family and a learning institution, such as school, (McLaren, 1989; Meadmore, 1999). Habitus refers to the disposition to act in a certain way, which stems from the embodying factor of cultural capital. Educational institutions have a habitus of social and cultural practices, which frame their interactions with their students. If the habitus of student and institution are in alignment then there is greater likelihood of the roots of cultural belonging to take hold, and conversely when they are at odds the result on the student may be a perception that ‘their cultural practices are inappropriate and their tacit knowledge is undervalued’ (Thomas, 2012). This sense of belonging does not work in isolation, findings by Osterman (2000) find a significant association between a sense of belonging and academic engagement. Krause and Coates (2008) extend this notion to provide a bridging imagery where connections with the university create a link from prior learning to present learning. Belonging then is closely related to Tinto’s social and academic model of integration as discussed in 2.2 on pages 24 to 27. Developing a student’s sense of belonging is multi-faceted and complex, an aspect of which is building academic community awareness.

Findings from a review by Thomas, (2012 p10), present a compelling case for a sense of belonging being critical to student success. It is argued that although a sense of belonging is a widely accepted phenomenon amongst

university staff, it is 'not addressed in institutional priorities, policies, processes and practices' as discussed in 2.8 on pages 35 and 36. She notes that strategies are frequently outside the academic mainstream and are focussed on a narrow band of students. A culture of belonging is important in any model of education, but perhaps more than ever in a transnational context, where as discussed in 2.7 on pages 31 to 35, the pervading educational culture is driven by a western model and those experiencing it primarily stem from different cultural roots. A university is a community and this community must have a strong core that holds it together that each and every student can feel an integral part of. This aspect of a culture of belonging is one that RCSI appears to achieve.

It's perfect, I feel amazing actually. The university is good, so being part of it is perfect. You can go out on the streets with the RCSI logo. It feels good, so good. Student 3: Egyptian Nationality.

Students not only demonstrate a very strong sense of pride and belonging, but also embrace the cultural mix that defines RCSI Bahrain, with its student body originating from over 40 countries.

The cultural mix is good here. The problem with most of the colleges in Bahrain is that it is a closed environment; they are not exposed to any other points of view. They just know theirs and most don't accept foreigners. Student 9: Bahraini Nationality.

This strong culture of belonging is fertilised in the first-year experience at RCSI Bahrain by a group of long standing academics, whose backgrounds are presented in Figure 10 on page 72. Most of these staff members have been with the medical school since its opening ten years ago. A non-partisan approach with religious acceptance, no matter whatever creed or sect, and a supportive, accessible academic scaffold, enables each student to normalise their social and learning experiences within a positive environment.

In other colleges it is dull and dark, but here it is different. Student 6:
USA/Bahraini Nationality.

This helps to avoid feelings of rejection and recognise and enjoy the opportunity to embrace diversity.

We can know each other. It is good for us to know other cultures. Student 1:
Kuwaiti Nationality.

The strong sense of a culture of belonging creates feelings of pride within the student body.

I am so proud to be here and I really want to graduate from here and feel that it is my home. Student 8: Bahraini Nationality.

In this transnational context the differences between the western Irish pedagogical and academic framework and largely Middle Eastern student body is successfully bridged, creating a keen sense of belonging.

5.7. Summary of Chapter Five

Culture influences all aspects of the transnational student life. It moulds a student's educational experience, beliefs systems and coping mechanisms. Students enter higher education with both expectations and preconceptions, but prior learning experience, as discussed in 2.10 on pages 37 to 42, and its related expectations and preconceptions may in the transnational context provide stumbling blocks rather than help in entering an Irish medical school. High levels of motivation on entering medical school can swiftly turn to disengagement as the effect of culture shock becomes apparent. Family influence can be a driving force in students choosing a medical career and students can face a decrease in motivation when faced with challenges as a result.

Students view RCSI Bahrain as special. Specifically, they highlight and value the sense of belonging, friendliness, the diversity, respect, approachability and the sense of community both in academic and social terms. They talk about RCSI Bahrain with words of pride and value. This perception indicates that appropriate conditions exist to enable the institutional aim of 'colleagues in learning', which is a term later discussed in point 6.8 on page 131, to flourish and a positive institutional experience to evolve.

The discussion now turns to the third theme of making a successful transition.

Chapter Six

Theme Three: Making a Successful Transition

6.1. Introduction to Chapter Six

Tinto's Model of Longitudinal Departure comprises both academic and social integration. From the factors that he considers, and as discussed in 2.2 on pages 24 to 27, Tinto (1993) refers to institutional experience as being the most influential factor on the student experience. His argument states, that if this core interaction is problematic, this leads to difficulty in social and academic integration and so ultimately to poor levels of academic success.

The focus in this chapter is on the theme of making a successful transition. This is contextualised in RCSI Bahrain, which is an Irish transnational medical school situated in the Middle East. Encompassed within the overarching theme of making a successful transition are the sub-themes of: a multi-faceted transition; academic culture shock; scientific fit; modes and strategies of learning; attendance; assessment of learning; learning communities; academic support; the 'state of realisation'; and social integration. These themes have emerged from thematic analysis of student and staff interviews, following Braun & Clarke's (2006) Six Stage Approach to Thematic Analysis. Tinto's (1993) Model of Longitudinal Departure provides the guiding theoretical framework.

The available literature on teaching and learning is extensive, but it is not the aim of this research to investigate this area in detail, but to draw out points which are pertinent to the emerging themes on making a successful transition in relation to success and failure in Foundation Year medical school.

6.2. Sub-Theme 3.1: A Multi-Faceted Transition

Tinto (1987) discusses the notion of transiting from membership of past communities of school to the new communities of university. He talks about

the notion of multiple communities, consisting of academic and social, and the strategies that students employ to approach these. Referring to Attinasi's (1989) description, as discussed in 2.2 on page 26, this initial experience of third level education comprises three elements: the physical, the social and the cognitive. The latter two elements share commonality with Tinto's theories, but the former physical aspect also appears to be an impacting factor in this research as illustrated by the following student comment.

I have a problem when I go to a new place I don't get used to it so fast, so the problem is getting into the new environment of the new place. This was my biggest problem. Student 3: Foundation Year Repeating Student.

For some students coming from an Arabic learning background all three of Attinasi's factors can be experienced.

Everything is new. I come from a Government School so it's like every aspect is different, in school it is only girls. Student 2: Repeating Foundation Year.

This student introduces the point that Arabic schools are single gender schools and the transition for these students is not just physical, social and the cognitive, but additionally involves a cultural element.

It is also of interest to note that previous Student 2 and 3, who talk about problematic transitions, are both currently repeating students having failed Foundation Year in the last academic year. Whereas the following Student 9, who appears to have enjoyed an immediate and seamless transition, achieved a first class honours in her Foundation Year grade.

I remember I was very comfortable in the first few days, meeting people. It was fine for me. Student 9: Foundation Year H1 Grade.

Student insight into experiencing academic transition demonstrates the differences in the individual experience of the depth, length and experiential

impact of this phenomenon and on the ultimate result on academic success. First experiences, it appears are important for setting the scene of learning. A problematic or drawn out transition period may have a longer lasting effect than previously perceived.

Students in the first-year of university face a number of transitional issues. First year medical school covers a large amount of material across broad science subject areas. Challenges that students face include: scientific content adaptation from secondary level education to third; adapting to a large class size; and dealing with large chunks of content through the large-scale impersonal delivery style of lectures.

Focusing on lectures was really hard. This was the thing I found most hard. I didn't know how to focus on lectures and understanding them was a major problem to me. Student 9.

The challenge presented by lecture learning proves difficult to overcome by many students, as illustrated by the following repeating student.

Most of the students are not paying attention. Some of the students are surfing, someone's phone rings, someone is laughing, joking, sleeping. You know most of the lecturers are talking to the first few rows. I don't think that lectures are helpful for me. Student 3: Repeating Foundation Year.

Transition means struggle and a key area of struggle is developing an active, independent learning style.

Like in the first two or three weeks I was deciding how to study, like, for example in the first week they taught us that you can study this way or that way but it was difficult to know what is the way for me. Student 5.

This transition period involves not only getting to grips with how to study but also with how to simultaneously revise.

They have to build two calendars, one for study and one for revision. Revision gets less as it goes along; you lose less when you revise on a two-week period. They learn and then leave their revision to the last fortnight and that's a waste of time, they have to relearn and they think it is revision. Staff C.

The cyclical and complex nature of the learning and revision cycle is easily overlooked, misunderstood, ignored or simply not realised in the transition period.

They have no idea, I tell them but with many it goes right over their heads. Staff C.

The impact of this failure to gain control of their learning is an on-going transition period, where instead of students finding their way and reaching what will be later described in 6.10 on page 137, as the constructed term - the 'state of realisation', they remain unanchored and vulnerable. This transition period for many students lasts for at least the first semester and for some the whole first year.

For me I had transitional issues for the first few weeks, other people might have had it for the first semester. Student 9: Foundation Year H1 Grade.

Ultimately, the impact of transition can be directly seen on academic achievement. This is shown by the academically successful student above who experienced a short transition and the repeating student below who experienced a more extended transition period.

At the beginning it was hard because I didn't know what to do. Then later on I started getting used to it. First semester exams I didn't know how the exams would be. I wasn't used to the university so I didn't do well in the first semester. Student 3: Repeating Foundation Year.

The difference in how students experience transition illuminates how each student's experience is a personal one and how individual components of the transitional journey can impact on some and leave others unscathed. Some students transit immediately and effortlessly and others face a long struggle, the ultimate result of which can be academic failure. The following sub-themes integrate aspects of this multi-faceted transition, starting with the area of academic culture shock.

6.3. Sub-Theme 3.2: Academic Culture Shock

Quinn et al., (2005), as discussed in 2.10 on page 39, term the phrase 'academic culture shock' for students who feel that they do not understand the differences between the academic aspects of school and third level education learning and suffer as a result. Academic culture shock can stem from underdeveloped or incorrect expectations of higher education. As a result, unprepared students can face a rude awakening in the first few days and weeks of their course (Richardson, 2003; Forrester et al., 2004; Long & Tricker, 2004; Quinn et al., 2005), which can result in alienation, disengagement, denial and ultimately academic failure.

Academic culture shock is a key aspect of the academic transitional experiences of students into third level education and as exemplified in the following repeat Foundation Year student comment, can manifest itself in a literal form of a state of shock.

It was like I was in shock a little bit. Student 2: Repeating Foundation Year.

An additional factor is that academic culture shock can be unforeseen, appearing to impact previously high achieving students. This is a related aspect to the 'paradox of failure' (Perry et al., 2005), as discussed in point 2.10 on page 40, which stems from differences between expectations and reality, and in the case of the following repeating student his high degree of

initial self-efficacy on entry to medical school swiftly turns to unexpected difficulties when faced with transitional challenges.

I was expecting everything to be easy because of what I had before, I was an 'A' student, when I came here I thought it was going to be the same. Student 2: Repeating Foundation Year.

Transition, with its complex mix of change in academic content, modes of learning, lecture format, size of classes, and assessment forms can silently derail students and result in a covert and unacknowledged academic distancing and a feeling of lack of control over learning. Historically, students who are most in need of help are those least likely to ask for it (Baumgart & Johnstone, 1977; Eaton & Bean, 1995; Bentley & Allen, 2006; Chickering & Hannah, 1969), which creates a situation where the institution needs to take an pro-active role to reach out to each student. All students do not experience academic culture shock, and amongst those who do experience it, it can differ in impact. Mann (2005) discusses in 2.2 on page 26 that there are varying degrees of comfort levels that students have when experiencing academic and social involvement and engagement within an institution and that a uniform institutional approach can result in further alienation and potentially derailed students. Academic culture shock is not only a topic of poor awareness, but also there appears to be a lack of understanding of the specifics of the student transitional journey. It is crucial that an institution is cognisant that each student experiences transition in differing ways and what might be experienced as the hurdle of academic culture shock by one student, might be traversed effortlessly by another. To better understand this journey the aspects of key academic content are now considered to gather insights into transitional learning of the sciences.

6.4. Sub-Theme 3.3: Scientific Fit

The three core sciences on the Foundation Year programme are Physics, Biology and Chemistry, as shown in Figure 8 on page 67 and in Appendix 3. A

good student understanding of these curricula areas is fundamental to academic success in both Foundation Year and in future years of learning in medical school. Previous research by Leksandar-Hayes, (2013), as discussed in 2.10 on page 39, considers the fit between Arabic secondary science education and a western medical school curriculum. The results show there to be high levels of confidence in students' knowledge in science indicating a suitable dovetail of content fit between Arabic secondary school and a western medical university. However, despite these findings of suitable content fit, students can still encounter challenges when faced with core curricula Foundation Year content. To this purpose the core scientific content is considered to better understand the Foundation Year student experience and how students approach the significant differences and challenges in the depth, breadth, delivery methods and assessment of the scientific information that they encounter in their move from secondary to third level education.

Before moving on to the discussion of the individual science modules, the pass rates for the 2010-2013 Foundation Year students in the focus modules of Biology, Physics, Chemistry and the Combined Sciences are presented.

Figure 18: Pass Rates in Modules 1, 2, 3, 10

Science Subject	Pass Rate
Biology	90.6%
Physics	85.4%
Chemistry	84.4%
Combined Sciences	82.1%

6.4.a. Physics

Out of the three sciences, Physics was assessed by the students to be the least problematic Foundation Year science subject.

From a Physics side, at the university it is medical Physics, so it's not that hard compared to High School physics. It's like fine. It's not that bad. Student 3.

This is also a perspective shared by the academics.

Generally, I think students have a greater difficulty with Chemistry than Physics. Staff C.

Perhaps these perceptions of finding Physics less challenging, can find an explanation in the degree of appropriateness that Physics has to the ultimate aim of the students of becoming a medical doctor, to the extent that the knowledge is directly translatable into medical application within the same academic year.

Physics is very focused on medicine and the principles of Physics very much apply to medicine, so much so that I am able to take the students in the second semester over to the hospital and they are able to see what they got lectures on in the first semester. Staff C.

Good curricula design and vertical alignment aligns this Physics content with medical application. A further possible interpretation of the positive perception surrounding Physics is that the relevant content is highly accessible, facilitates understanding and so requires less study time.

Physics is easier. Even if you don't know any answer you may lead to the answer. Student 3.

The academic lecturer perception supports this viewpoint in terms of the expectation that students will perform better in Physics assessment.

You will probably have a high pass rate in Physics compared with Chemistry. Staff C.

The actuality of academic results does support the shared student and academic perception, with Physics experiencing an 85.4% pass rate and Chemistry an 84.4% pass rate shown in Figure 18 on page 115.

6.4.b. Chemistry

Academic performance in both Physics and Chemistry is linked to numeracy.

One of the problems they experience in both subjects is numeracy, this is lacking amongst some of our students. The need for it in Physics is there, but they can get over it a lot better in Physics than in Chemistry. Staff C.

This is viewed as a worldwide problem and not one that is specific to the transnational setting. A lack of understanding of numerical concepts in Chemistry and Physics is linked to struggle in these subjects, with particular emphasis being placed on the numerical challenges of Chemistry, (Downing et al., 2008).

An additional problem outlined with relation to Chemistry is the student ability to visualise spatial aspects of chemical concepts, such as atoms and molecules in three dimensions.

When you go into three dimensions this is when they can start to lose contact with the subject. You only get a certain percentage of people who are able to do this kind of thing. Staff C.

Reference is also made for the need to understand basic scientific concepts such as the Mole Concept and the manner in which these fundamental concepts create a baseline of knowledge.

It's so simple and permeates through the whole subject. Still you can get on without it, but not understand your subject properly. Staff C.

Students' high expectations of their own knowledge on entering medical school do not always live up to the reality of the first-year experience, especially when the fit from secondary level to medical school is inappropriate.

Like personally I had difficulties in Chemistry because I didn't study Chemistry at all back in High School, so when I came here it was like a new thing for me and I said I will be fine with it but I wasn't, so that was very difficult. Student 6.

This failure to encounter a smooth content transition from secondary school to Foundation Year medical school, can lead to academic struggle and eventual failure. Even when students have studied Chemistry to an appropriate level at school the depth and subject specific areas can lead to academic difficulties and in the case of the following student, failure.

Chemistry at school was totally different, it was basics, but at university it is much deeper. Organic Chemistry is what we take now. I didn't take Organic Chemistry in High School so I have problems with Chemistry - a lot of problems. Student 3: Repeating Foundation Year.

The complexity of students entering from a wide variety of secondary school curricula creates a non-linear entry for some students. There expectation is that they will be sufficiently prepared, but the reality is deficiency in key curricula component areas.

Referring back again to English language challenges previously discussed in 4.6 on pages 84 to 91, and the problems encountered when required to learn science through a second language. It appears that these aspects seem applicable to a subject such as Chemistry, even with its high numerical reliance.

I studied Chemistry, but not in English so I didn't know it in English but in French. It was like I knew it was going to be hard, but I didn't know it was going to be this hard. Student 6: Foundation Year Pass Grade; IELTS 7.

Again this student makes reference to the unexpected challenge of English language difficulties in science, drawing in the aspect of academic culture shock, as discussed in 6.3 on pages 113 and 114, and the lack of preparedness that students enter Foundation Year with. Despite English language skills being an influencing factor in Physics and Chemistry, the science where lower language skills appear to have the greatest impact is the lexically rich subject of Biology.

6.4.c. Biology

Perhaps the most surprising finding in relation to the science subjects is with regard to Biology. This subject displays the highest pass rate amongst the sciences of 90.6%. At the same time it is perceived as being particularly challenging by the students, not in terms of complexity of content, but rather the amount of specific vocabulary that needs to be learned is identified as being the challenge.

Subject wise, looking back I don't really find it too challenging especially with the subjects I'm going through right now, but the subject about parasites, their life cycles and their effects on humans, it wasn't the material, it was the naming of the different stages of

their lives. It would have a general name and then three other names naming their life cycles basically. Student 4: IELTS 7.

To cope with extensive biological lexis in their transition from Arabic secondary school to an Irish medical school, an applied coping strategy as discussed in 4.6 on pages 84-91, is translation.

I have to translate things and I have to go through them to make sure I understand what this is because the information that we are taking here, we took in school, but it was in Arabic, so we have to translate. Student 2: Repeating Foundation Year; IELTS 6.

An additional strategy once the material has been translated is that of memorisation.

The terms of some bacteria are so difficult to memorise and understand. Student 5.

This combination of translation and memorisation of such an extensive lexical field appears to be the main challenge in Biology.

There is a lot more language and there is a lot more information, a lot more memorising, so I think that's why it is challenging. Student 3.

A point, which arises from the last two student comments, is the reference to memorisation. It appears that this learning strategy is given a high degree of importance in their learning arsenal, as opposed to understanding and assimilating the content.

The academic staff member responsible for delivering the Biology module also draws a parallel between intrinsic interest of the students in Biology and this being linked to being indicative of future success.

I actually find that students who tend not to do well in Biology, or don't like Biology, they don't seem to flow very easily up through the likes of Junior Cycle because it is the fundamentals. Staff A.

This raises an interesting link between the fundamental core content of a medical education, the intrinsic desire within a student to become a doctor, and the fit of interest between the two.

Despite the widespread perception of difficulty, Biology has a lower failure rate (9.4%) than either Physics (14.6%) or Chemistry (15.6%), indicating perhaps that numerical ability and inappropriate fit have a large influence on failure, or that language transition once achieved results in success.

6.4.d. Combined Sciences

This combined science module, which comprises a balanced representation of Physics, Chemistry and Biology, achieves the highest failure rate of 17.9% with fifty-five students over the three-year cohorts failing this module. The reasons for failure appear to be a combination of the factors previously stated for the individual modules of science; these being numeracy, extensive lexical learning together with the perception of a high workload and language challenges.

So it was really good as it gave me a lot of insights, but then the thing with it is that it is so big and has a lot of sections say in Microbiology and Chemistry and in the middle was Physics, yeah x-rays and stuff. Yes, so it was so big. Student 1.

Additionally, the added complexity of the combination of the applied science subjects leads to greater challenge.

Yeah, they were more challenging. They were closer to what we go through now but not directly related to human anatomy systems and stuff like that. It was different, like a lot of us didn't really know how to go through with it properly, to study it well. It was much more challenging than the separate ones of Physics, Biology, Chemistry.
Student 4.

From an academic lecturer point of view, it is the associated workload of the combination of sciences that is an influencing factor in failure.

They have a huge quantity of material, coupled with Physics and Chemistry, so the workload is most challenging in my subject anyway.
Staff A.

This combined approach to teaching and learning the sciences is a further step along the transitional path and it prepares the students for the integrated content delivered in future years. This module marks a move from a single science to a balanced integrated science module and this factor could go some way towards explaining the higher failure rate. The combination and application of knowledge is another hurdle to be faced and overcome on the transitional journey. It is a further advancement along the developmental path and is a key component of vertical progression.

6.5. Sub-Theme 3.4: Modes and Strategies of Learning

There is a widespread consensus amongst the interviewed students that lectures are not an effective way to learn. Even among those with high-level English skills who performed well in Foundation Year. The following student exemplifies this.

It was really hard to receive information in a lecture. I wouldn't learn from paying attention in a lecture. Student 1: Foundation Year H1 Grade; IELTS 7.

A reoccurring remark, particularly noticeable amongst students, was about difficulties in focussing in lectures, in the case of the followings student this may have contributed to him failing Foundation Year. This lack of focus may be associated with his lower language skills.

Most students don't pay attention in lectures. Some of them are surfing; most lecturers talk to the first few rows. I don't think lectures are useful for me. There were no breaks between lectures, so the information doesn't stick.
Student 3: Repeating Foundation Year; IELTS 6.

The following student raises the point about her inability to focus and tendency to become easily distracted, again this student has a lower language competency.

I can't focus the whole lecture. I lose focus and get distracted easily. Student 2: Repeating Foundation Year; IELTS 6.

Interestingly, the previous two students both failed Foundation Year, possibly indicating a link between lower English language competency, lack of focus in lectures and failure.

Tutorials were a more popular mode of learning, with students pointing out increased group interaction, problem solving and greater interaction with teaching staff.

With the tutorials, I would like the interactions when we were working in teams and stuff. It's really helpful and some problems we solved were really important. Student 1.

Not all tutorials were seen as equal, with a differentiation made between tutorials delivered by faculty and those by assistants.

I go for the doctors, but when the lab assistants do them, I don't go. Student 2.

The wider and deeper knowledge of the lecturers and the ability to make more explicit links to the lectures was a reason stated for choosing to attend lecturer delivered tutorials, and the converse as a reason to miss those delivered by assistants.

Cherry picking was an evident coping strategy in relation to modes of learning. Students choose to attend lectures based, not only on whom delivers them, but also dependent on the subject, or simply strategically choosing to attend tutorials rather than the lectures. These decisions are based on a perceived useful learning experience.

The following student seems to liken the information delivered in a lecture to noise, rather than educational content, with the usage of the phrase 'talking, talking, talking'. This is possibly a reflection of perceived understanding given her low English language ability. The ultimate result was her failing the year.

Sometimes I skip the lecture and go to the tutorial because they explain it more in the tutorial. It is more helpful, rather than talking, talking, talking.
Student 10: Repeating Foundation Year; IELTS 5.

Most students recognised the value of pre-reading their lecture notes before attending. This is skill taught in a two-day study skills course delivered prior to the commencement of the core content material in Semester One.

First I like to read the lectures before I attend them. Student 2.

However, despite the recognition of importance, this lecture preparation step is frequently skipped, with students claiming insufficient time.

No, because not enough time. Student 5.

A strategy that students turn to when faced with the large amount of information delivered through the didactic lectures is that of memorisation. This can be linked to the cultural influences on learning that can be carried over from secondary education, where rote learning is encouraged through the design of assessment (Sangoor, 1998; Shirawi, 1989), as discussed in point 6.7 on pages 128 to 131. This wash back effect can wash forward when students enter Foundation Year, encouraged by uncertainty as to what is required of them and faced with a constantly increasing mountain of learning.

They told me that my problem was that I memorise and don't understand, and somehow it was true when it came to the Chemistry parts. Like now after the fail I realise that I memorise, but in the exam they give a question but you have to understand the material to understand the question. Student 6.

Memorisation seems to be intrinsically connected to translation and with lower language ability, appearing hand in glove as learning strategies and frequently mentioned in the same breath, as by the following repeating student.

I have to translate it to know what it is, to memorise it, to keep it in my brain.
Student 2: Repeating Foundation Year; IELTS 6.

Memorisation, although highly popular amongst the student body, is equally as unpopular as a learning technique amongst the academics who favour understanding and application.

They can remember things from constantly doing them, but I don't emphasis memorisation, it's the lowest form of learning. Staff C.

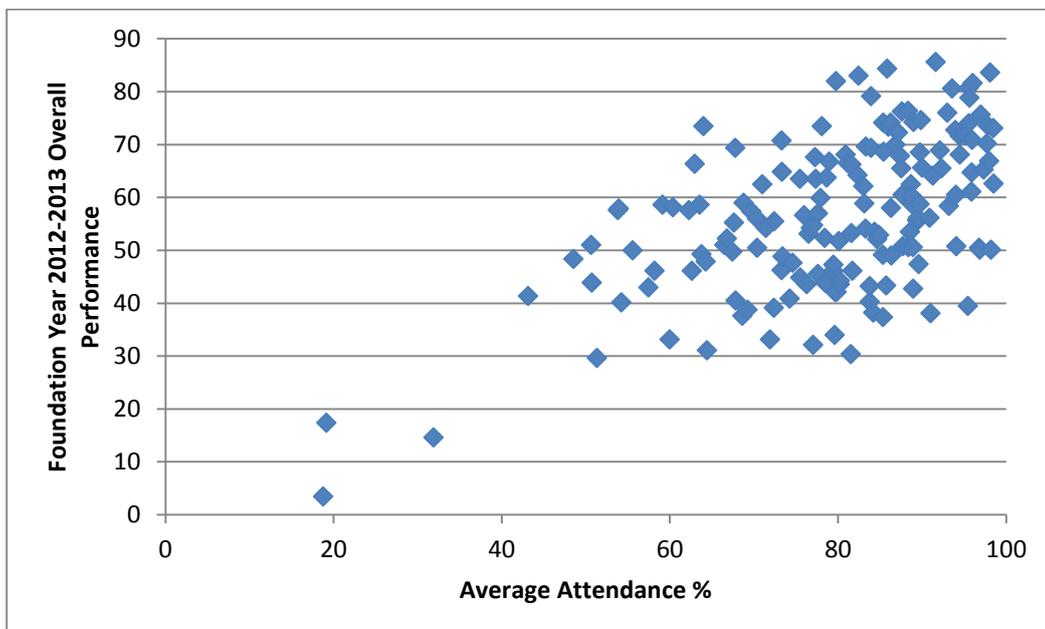
In summary, it appears that lectures are frequently perceived as an ineffective way of learning. A link seems to emerge between this perception and the language competency of the student. Tutorials are seen more positively, particularly those delivered by the relevant academic member of staff, as

opposed to support staff. Recognition is given to the importance of preparing for lectures, but time-constraints are discussed as limiting lecture preparation. A common strategy employed by students is memorisation. A link appears between memorisation and translation, indicating again the impact that a lower competency in English language can have on Foundation Year learning and ultimately on success or failure.

6.6. Sub-Theme 3.5: Attendance

Attendance in RCSI Bahrain has become a pressing issue. High rates of absence from lectures have resulted in the installation of an attendance system and the increasing application of the stated 100% attendance policy. Figure 19 below exemplifies the reason for this drive to improve lecture attendance, as the relationship between attendance and Foundation Year performance is clearly apparent.

Figure 19: Attendance and Performance in Foundation Year 2012-2013 Semesters One and Two



The availability of power point lectures on the Virtual Learning Environment has resulted in some students missing lectures, in some cases because they feel that they can study at home, rather than attend lectures scheduled at times they consider inconvenient, such as early morning lecture slots.

Sometimes I would have a streak of missing a couple of lectures, but always I tried to get back on track. Student 4.

A further reason is that some academic lecturers may be considered as less engaging than others.

You know who is giving the lecture and most probably you don't get much from this lecturer, so it is better to study the lecture on my own. Student 3.

Other lines of argument put forward by students is the desire to be recognised as being responsible for their own learning and being given the right to decide.

I know the number of students going to the lecture wasn't that big, but every student knows what he should do. Student 3.

This is an interesting point as this underlines the complexity of the transition of students in their first-year of learning, with the institution desiring and working towards the development of the independent learner, whilst on the other hand dictating issues such as attendance and removing potential independent choices.

It seems when it comes to attendance excuses prevail, but despite practices of cherry picking in terms of lecture attendance, students seem to be aware of the need to attend. However, this might not always be displayed in their behaviour with a resulting negative impact, as in the case of this repeating student.

Sometimes I skip some lessons to study, but this is not a good idea, I must attend every lesson. Student 10: Repeating Foundation Year.

6.7 Sub-Theme 3.6: Assessment of Learning

Assessment needs to find a common ground between inspiring and engaging students to study, whilst avoid a high level of assessment driven learning and creating an assessment driven approach to learning. The management of student expectations, as discussed in 2.10 on pages 37 to 42, make important contributions to learning, with effective understanding of what is required of students and the following of a study plan enabling students to keep control of their learning (Cross, 1996). This approach is exemplified in the case of the following student who achieves high academic goals.

What I did in Foundation Year was to study for each exam, even the small ones and I reviewed my lecture notes and tried to understand everything. Student 9: Foundation Year H1 Grade.

This point is associated with the need to have open avenues of communication with staff members so that students can clarify when confusion arises. Timely, useful feedback, as discussed in 2.10 on page 41, is associated with higher levels of learning and greater levels of student satisfaction (Wheatley, 2012). Feedback on assessments is particularly of importance to students with lower confidence and with uncertainties regarding assessment expectations. Additionally, amongst poorly performing students, early intervention following formative assessment which can enable students to understand their academic weaknesses and address these, whilst they still have sufficient time before high stake summative examinations, can make the difference between passing and failing.

Smaller group teaching and greater innovation in large group teaching, together with formative and summative assessments can provide opportunities for a variety of feedback, which in turn promotes a culture of

deep learning (Boud, 2000). It is also suggested that a greater emphasis on formative assessment in terms of a more substantial mark percentage allocation, would encourage students to revise more frequently, rather than take a strategic and rather last minute approach to summative examination preparation.

For me I would start two weeks before the exams and I would never manage to finish them on time, so weekly exams would have been better for me.
Student 7.

This move towards a student-centred approach and away from a tutor transmission approach, (Barr & Tag, 1995; De Corte, 1996), together with a more even distribution of grade allocation and greater frequency in formative assessment, could support learners particularly on their journey and move towards what is referred to in 2.10 on page 41, as a 'learning society', (Boud, 2000).

Listening to students' feedback can facilitate the assessment process, although time and staffing restrictions can place limits on what is achievable.

They kept complaining that we have low grades in short notes, you don't study for them, blah, blah, blah. I told them its because you don't give us short notes in the formatives and they said it was too much to correct.
Student 9.

The result of this can be dissatisfactory for both students and academics and result in feelings of irritation and disengagement.

Assessment is a factor of concern raised by many students interviewed in the project. Mixed findings represent the complexity of a field, which is not a simple judgement, but is 'embedded with underlying educational assumptions and principles', (Starr-Glass & Ali, 2012).

I don't understand the marking scheme and all, even if they explain to me, the professors, maybe because I didn't write the exact same words. I like it when they give you a diagram, name this and name this. This is good when there is this kind of question. Student 6.

With this student, recall of knowledge rather than application is seen to be a more desirable assessment approach. This could be linked to prior learning, or possibly to the duo of the frequently applied learning strategies of translation and memorisation, as discussed in 6.5 on pages 122 to 126.

Interim assessments were generally considered to be of use by both students and academics. This initiated the cycle of learning and revision, which enabled students to assimilate large quantities of knowledge, leading to academic successful outcomes.

What really helped me were interim assessments because they really helped you study. Student 1: Foundation Year H1 Grade.

Although not all students were in agreement with regular interim assessments, this viewpoint did not necessarily equate with academic failure.

Personally I didn't like regular quizzes, I didn't study for them. Student 4: Foundation Year 2:2 Grade.

However, it was noticeable that it is the higher achieving students who value interim assessments to a greater degree than the lower achieving students.

The good thing about continuous assessment in Foundation Year is that you have a trigger for studying. Student 9: Foundation Year H1 Grade.

This raises the possibility that the valuing and utilising of interim assessments as a 'trigger for study' is linked to what is described in 6.10 on pages 137 to 142, as the 'state of realisation', which is the point at which students

recognise and start to implement the strategies and approaches necessary for learning and studying at university level.

Students felt that interim assessments should carry a higher percentage of the overall marks for the module, and that this would enable greater academic success.

They could do continuous assessments, but for a good mark. It would help us pass the module and we would study for it. Student 8.

This though is an opinion not fully shared by the academics.

If we move too much in the direction of the formatives then you have students who have knowledge of small bits at a time. A complete understanding of the material is only ever shown in the summatives and that's what we want to examine. Staff B.

It appears that timely feedback and better communication of content and aims of assessments would facilitate student learning and performance, encouraging ongoing learning of knowledge.

Discussion now turns to the role of learning communities in transition from secondary school to medical school.

6.8. Sub-Theme 3.7: Learning Communities

A culture of belonging as discussed in 5.6 on pages 104 to 107 has a close relationship with effective learning communities. Just as social interaction and academic involvement go hand in hand in the recipe for success in higher education, so do belonging and learning. Tinto (1993) makes reference to the importance of learning communities and the effect that transition from secondary school to third level education can have on a student. To create an effective community of learning, all parties need to be 'partners in a learning

community' Jackson & Livesey, (2012), where each and every person is a valued member of the learning community.

You are going through what a lot of other people are going through, this makes me feel like we are all in it together. Student 4.

Unlike school where students follow a variety of learning paths, medical school provides students with the opportunity for a shared learning experience, and as shown in the student comment above, this aspect creates a feeling of collegiality and a learning community.

Several students make reference to not only a sense of community, but also a sense of home and of comfort.

I can say I am proud. I've seen other universities, but here it is kind of your home. RCSI is a place where you don't feel uncomfortable; you are like living your life. Student 2.

Educational and social aspects of the university experience cannot be separated and it is this integration that can facilitate positive outcomes, including persistence, satisfaction and academic success. Such outcomes come from creating a learning community in which both staff and students are involved and are all focused on the ultimate aim of a medical education.

There is evidence that despite the relationship that higher entry requirements facilitate greater success, it seems too that academic teams can influence the success and retention of students to a large extent, as discussed in 2.10 on page 39 (Braxton et al., 2000; Rhodes & Neville, 2004). The academic department, to which a student belongs, wields a high degree of influence over attitudes to learning, expectations, engagement and importantly on the overall sense of belonging, as evident in the following student comment.

You see that our college is really special. From the way we are being taught to the way people respect timings here. Some of the things other people might not notice, I notice them. Being part of RCSI makes me proud. Student 9.

This reference illustrates that RCSI Bahrain provides a strong sense of community of learning of which the students are proud and clearly articulate. This is an important achievement as it demonstrates the ability of a transnational institution to transcend cultural boundaries, to truly provide a positive transnational medical educational experience and a positive culture of belonging.

Crosling et al., (2008) take a broad, holistic view of learning communities that encompasses curriculum design, content, assessment, delivery programme structure, and student/academic interaction. Thomas (2012 p32) raises the point that students who perceive that they have a not so good relationship with academics are more likely to leave, she states that good relationships are based on informal relationships that 'recognise students as individuals and value their contribution'. Positive relationships can help form positive outcomes, even when they are not initially expected, as shown in the following student comment.

When I came I didn't expect it to be so friendly, everyone is really friendly.
Student 6: Foundation Year Pass Grade.

The evidence points to students who have a good relationship with staff, being more motivated. This in turn, encourages them to work harder and achieve greater academic success. In terms of having a good relationship with staff, the following factors are seen to be crucial: staff knowing students names and viewing them as individuals; staff interested in student progress, not just their problems; staff being available to respond to students in a timely way; staff valuing student input and respecting it, irrespective of diversity and

difference; staff being approachable and 'less formal, like a mentor' rather than 'formal like a teacher', Thomas (2012 p34).

Learning communities are built on the foundations of student and staff interactions, enriching educational experiences and a supportive learning environment. At the centre of creating an engaged and active learning community is a complexity of factors; the heart of which is the view that the student is a partner in the process, not merely a receiver of a product. This partnership is an aspect of the student learning experience, which has been explicitly stated from the President's inaugural speech in the opening of RCSI Bahrain ten years ago, where the first cohort of twenty-eight students were addressed as 'colleagues in learning', (O'Higgins, 2004). This fundamental seed sown at the inauguration of RCSI seems to have taken root and be providing students with a supported and enriched learning experience.

6.9. Sub-Theme 3.8: Academic Support

Support is widely acknowledged as being freely available in RCSI Bahrain and the student body clearly holds this viewpoint.

The doctors they help us. I know that I didn't go to them, but I see other students. You don't just do it by yourself like other universities. If you want help, it is there. Student 8.

This is a view also held by the academics.

It's not the same as other universities where you can't find the building that the lecturer is in, never mind being able to knock on the door and walk in with a laptop and ask questions. Students are very relaxed around the Foundation Year staff, sometimes they are a bit too relaxed and you have to tell them to make appointments, but they will literally land on top of you with their computer with a question, they have just been thinking that and

they come in. I think this is a sign that they feel relaxed and they know that there is support there for them. Staff A.

Both students and academics made positive comparative reference to other universities, stating that RCSI Bahrain provides greater levels of support and open access to academic support in comparison with other institutions. A possible reason for such high levels of support is the relative infancy of the institution. The medical school has been established for only ten years, and the first cohort of students comprised twenty-eight students. The medical school was initially housed within a villa where students and staff lived amongst each other. A high percentage of the original staff members still teach in Foundation Year as shown in Figure 10 on page 72. The ethos of open access to students has been carried forward from the early days, despite the fact that each Foundation Year cohort now numbers one hundred and sixty five students. This longevity factor directly relates to the philosophy of learning and this point is an important aspect to consider when establishing transnational institutions. A further interesting point that arises is the view that the lecturer that students perceive to be the most helpful, shares the same cultural heritage and mother tongue as many of the students. This may have influenced the academic's ability to explain in simpler terms, or may have made him more accessible to the students.

Despite the widespread indication that lecturers offer open and on-going support, one repeating student feels differently.

Lecturers' maybe they ask - what did I say in the lecture? If I had known what you said in the lecture, I wouldn't have come. Student 3: Repeating Foundation Year.

This indicates a possibly frustration arising from lecturers' perceptions that students either did not attend a lecture, again linking to attendance, as discussed in 6.6 pages 126 to 128, or they did not pay attention, linking to distractions, as discussed in 6.5 pages 122 to 126.

Another avenue of academic support is that of friends, who were viewed as both a source of information and as a source of motivation.

We would give an idea of what we have done so far and even the person who had not done much would feel guilty and would go on to do better. Student 1: Foundation Year H1 Grade.

There seems to be emerging evidence that student study groups form based on similarities in performance.

In my group, like the repeat students, we are helping each other. Student 2.

This indicates that there appears to be a naturally forming differentiation between the academic performances of students which influences the peer groups that they surround themselves with. This seemingly sub-conscious grouping of similar performing students could appear to reflect and reinforce a student's own study habits and related performance. This raises an interesting point that while high achieving students may benefit from study groups, lower achieving students may not.

A further but less utilised form of support is the Student Success Centre, which offers tutor support in the sciences, English and study skills. Only three out of the ten students interviewed accessed it.

One repeat student found it a useful form of support in terms of study planning.

I went to the Support Centre and we discussed my daily routine. I actually got help from them. Student 3.

A student made reference to accessing science help specifically in the subject failed.

I failed Biochemistry and I passed all the rest, so I still have to focus more but I know now. I went to the Student Support Centre and asked for help.
Student 8.

Both of these students indicate a retrospective selective usage of the Student Success Centre, rather than an integral and on-going support tool.

One very high achieving student used the Student Success Centre to facilitate her own tutoring activities in a Peer Assisted Learning role. This is an interesting usage indicating a far higher level of application from a very highly achieving student.

For the Student Support Centre what I loved was the Peer Assisted Learning sessions. When you recite it for others you understand it and see it is important. Student 9: Foundation Year H1 Grade.

6.10. Sub-Theme 3.9: The 'State of Realisation'

The 'state of realisation' is a term, which has been constructed by this research as a result of thematic emergence from analysis of the data. When things go wrong many students bury their heads in the sand and refuse to acknowledge their problems, employing a strategy that is far from pro-active. This inability to recognise and act can be closely linked to what in this research terms the 'state of realisation', this is the point at which in the words of the following student understanding 'clicks'.

Maybe I didn't study hard but I didn't know my weakness was Chemistry. I failed in the second semester, that's when it clicked. Student 6.

As in the case of this student, realisation can be linked with failing summative examinations. This is the point at which a student can recognise that they are in academic difficulty and start to implement strategies and access help in order to support their learning.

The following student displays elements of what was discussed in 2.10 on page 40, as the 'paradox of failure' (Perry et al., 2005), this stems from differences between expectations and reality. The 'state of realisation' in the case of this student came too late and she is now repeating Foundation Year.

I thought I don't have to go through the lectures again. I don't have to do all of the things that they say I have to do. I was an 'A' student at school and I didn't have to study, so that's like how my brain was working. Student 2: Repeating Foundation Year.

The 'state of realisation' can take different students a variety of time periods to reach and implement. In the case of the following Medical Commencement Programme student, despite recognition of the time constraints learned from her prior experiences in RCSI Bahrain, she fails to employ appropriate learning strategies on initially joining Foundation Year.

I know I have to, but when I study I don't know what happened to me because I say there is time, there's time, but now I am out of time. I know there is no time and this is the last chance. I have this feeling at the beginning of the semester I do something different, but I don't. Student 8.

The impact of student inability to swiftly and fully adapt to a new learning environment and style is linked to a failure to achieve their full potential in the first year. Student inability to comprehend the criticality of rapid adaptation can lead to on-going floundering and failure.

Last year I wasn't very good in Semester One. I failed 3 modules, and then at the end of Semester Two I failed 3. I did the repeat examinations but I did not pass, so last year I did not have any great achievements in Foundation Year. Student 2.

The 'state of realisation' is a major step on the transitional ladder that allows students to seek support, but it does not necessarily guarantee that they will

find it in the form that would best support them. To support this transitional period and in the students reaching their 'state of realisation', academic support needs to be multi-faceted, layered and integrated. Thomas (2012), indicates that: students prefer support internally from their own academic departments through facilitating arenas where students can share their concerns and can alleviate their worries before they become out of hand; equipping students with knowledge about their transitional journey and academic development allows expectations and managing skills to develop; implementing personal tutors facilitates support; establishing peer mentoring facilitates a frequently more accessible avenue of support which can facilitate signposting students onto further support; support should take a strong academic focus and be embedded within the academic experience and should additionally be linked to pastoral, clinical and student union support with referral chains; it should be timely in implementation from the day of joining the university; and finally it should be suitably designed to identify students at risk. An additional aspect of support frequently overlooked in the tendency to focus on underperforming students is reassurance. Simply through the provision of reassurance that students are on the right track can help in the transition process.

Universities and particularly medical schools because of their vocational leaning (Yorke & Knight, 2007 p158), can benefit from linking academic success to resulting employability. This can be viewed in relation to student attributes in four key areas: powers of understanding (evidenced by gaining good marks); application of skills (generic and subject specific); metacognition (capacity for reflection); and self-efficacy (also described as 'other personal beliefs'). Self-efficacy refers to the belief in the ability to manage potential situations by executing the course of required action. Self-efficacy, as discussed in 2.10 on page 42, has been linked to motivation and commitment levels and an individual's willingness for risk-taking. Yorke & Knight (2007 p160) refer to this as having the confidence 'to make a difference', and Rotter (1966) refers to this concept as 'a locus of control'. In essence it is a student's belief that through working hard they will improve their abilities and outcomes (Knight, 2007). This locus of control can be seen to be integral to the 'state of

realisation' and appears to be a dawning process, with some students understanding the concept at an earlier stage than others. It appears that the earlier and more clearly the articulation of this notion, then the stronger the position the student is in to academically achieve, as in the example of the following student.

I don't think it is a major secret, people take Foundation Year as just a year, no it's not, you have to study, study, study. Student 9: Foundation Year H1 Grade.

On first joining medical school, students are generally considered to have and also view themselves as having, quite high levels of self-efficacy. They are successful high school graduates, comfortably sitting in the top academic bands of their classes. They have belief in their own abilities and academic capacity. In this context poor academic performance is insidious and creeps up on them, frequently without them realising, and it can take their summative examination results for them to start to reassess and realise the reality of their failure and correspondingly revisit their initial assessment of their own abilities.

I thought I would get H1, but it was really H2 or a pass. Student 2: Repeating Foundation Year.

Just as self-efficacy is a fragile concept and just as it can be dented by a lower than expected performance, it can also be boosted by good academic performance.

I passed all subjects, got a couple of honours maybe one or two passes. It was good. I felt happy. Student 4.

In the initial transition period into medical school, it seems that there is a dichotomy that appears between the concerns of the students and those of the academics, with academic performance being seen as the key in the

academics eyes, whilst the students themselves do not necessarily share this academic perspective. Thomas (2012), points out the greatest lack of confidence that students encounter on joining university is associated with concerns about making friends. It is this aspect of adjustment that appears to worry them most, with most students believing that they have the ability to academically succeed. Academics on the other hand are greatly concerned with the ability of students, not in making friends, but with academically coping with a more complex and increased workload in comparison with their school experience. This disunion of thought processes at the starting point of the first-year experience leads to a false sense of security for the students and an inability to understand from academic staff as to why students spend so little time in the library and so much in the cafeteria. Realisation bites later when having made the initial transition into university from a social perspective, students can face the daunting prospective of their previous academic confidence proving ill-placed when facing their first set of summative examinations and a difficult academic transition and period of struggle which culminates in eventual academic success or failure. In the case of the following student the ultimate result was failure.

First semester exams, I didn't know how the exams would be. I wasn't used to the university exams so I didn't do well. Student 3: Repeating Foundation Year.

An additional aspect is the willingness of the student to alter negatively impacting behaviour.

No matter how much you are going to advise someone the temptation of doing something new is much more appealing that studying for an hour or two, that's the way I see it working out. Student 4.

This resistance is linked to the 'state of realisation', self-efficacy and a locus of control. Without the activation and application of these internal factors, students will continue to struggle. A student enters university in a position of

disadvantage, the system they enter is fixed and it is they who are expected to adapt to this system. A lack of realisation of what is required from them and the resulting failure to implement third level learning places many students at risk. It is perhaps the university perspective as to what constitutes an 'at risk' student that should be revisited, this could be a label given to all students and revised only when a student has demonstrated identification and acquisition of realisation through evidential social and academic integration.

6.11. Sub-Theme 3.10: Social Integration

The focus so far in applying Tinto's model has been on academic integration. As discussed in point 2.2 on pages 24 to 27, it is academic integration that holds great importance in Tinto's model. However, Tinto's model does clearly represent the importance of both academic and social integration. The importance of both these aspects in terms of this research is articulated in the Key Stages Adaptation of Tinto's Model of Longitudinal Departure presented in Figure 3 on page 31. It is with this in mind that the social integration of students is now discussed.

The facilitation of social integration into university is an aspect that can be overlooked as it is frequently not considered to be a role of university staff and in particular academic staff members. However, effective social integration can develop cohort identity and an overall sense of belonging on the programme. Thomas (2012 p48) states that 'students who found it harder to make friends had a more negative student experience', and this negative experience frequently results in academic failure. Increasingly, there seems to be growing importance given to focussing on the classroom as a social role facilitator in the quest for success and as a pivotal mechanism in creating social interaction between staff and peers, which then extends into the students' social arena, (Kuh & Vesper, 1997; Tinto, 1993, 1997, 2000).

Social integration can be multi-faceted and help provide various layers of support as discussed in 6.8 on pages 131 to 134, which can facilitate effective communities of learning through: promoting academic integration and

belonging; developing confidence; improving motivation to study; providing a first layer of academic help; providing support through peer groups, academically as well as emotionally; sharing tacit knowledge such as upcoming assessments; and facilitating a non-threatening environment in which to comparatively self-assess. Peer study groups are a bridge between social and academic integration, and students acknowledge that partaking in such a group positively influences them. However, as discussed in 6.9 on pages 134 to 137, students appear to create study groups with students of a similar academic level, so whilst some are positively influenced by engaged and hardworking peer study groups, others may be negatively influenced and have detrimental behaviour reinforced by their chosen peer group.

Interestingly, the majority opinion amongst RCSI Bahrain students who were interviewed was that social integration was not problematic.

Making friends here is pretty easy. It doesn't matter where you come from.
Student 1

As the comment from the student above illustrates, reference is made to the differences in the nationalities of students, but also to the fact that there were no corresponding preventative issues in forming friendships and to the level of welcome and friendship that they encountered.

The 'paradox' (Perry et al., 2005), referred to 2.10 on page 40, that stems from differences between expectations and reality, appears to apply in an inverted manner in terms of social integration. Students cite lower expectations of social acceptance before joining and find RCSI Bahrain to be a welcoming, social, multicultural, accepting environment.

When I came here I didn't expect it to be this friendly, everyone is really friendly in this university. Student 6.

Despite making reference to a brief social transition period, the student below quickly develops an active social life.

When I first arrived I didn't know anybody and two weeks later the social life is really big. Student 3.

In the words of the following student, it seems in this aspect that RCSI Bahrain facilitates transition well, allowing a social cohort of students to flourish.

The social life at RCSI is great. I don't think there was a problem in introducing us to this life. It was great. Student 9.

Perhaps this ease of social integration is a concept encountered in a transnational setting, where over 70%, see Appendix 7, of the students share a Middle Eastern background and corresponding core values and habitual lifestyle, in this case an Islamic, Arabic heritage. A high proportion of the additional students share the same religious beliefs coming from families who stem from an Islamic base. Despite the academic and linguistic world being different and requiring levels of adaptation, the cultural similarity in the majority cohort may well allow for sufficient threads of community to exist that social integration is unproblematic.

6.12. Summary of Chapter Six

Academic transition is of key importance, multi-faceted and variant in this transnational location, whilst social integration appears to be unproblematic. The modular and learning focus is on the scientific subjects as it is these that provide the core concept learning of the foundation towards becoming a medical doctor. Staff members are viewed as being highly supportive, offering a high level of access and appropriate academic support. Staff experience and cultural awareness facilitates a positive intercultural student experience.

Academic transition is experienced to a different degree, in an individualised manner and for varying lengths of time by each student - it is a very personal experience, not a shared one. Academic transition is a major influencing factor on academic achievement in the Foundation Year medical school experience. Situated at the heart of the academic transition is the emergent notion of the 'state of realisation', the point at which students appear to comprehend and implement strategies associated with third level learning success.

Between the three science subjects, the least problematic subject is Physics. This is seen to be academically the easiest subject, with the highest level of medical application. This viewpoint is shared by both students and staff. Chemistry is considered to be most impacted by poor numeracy skills and the challenge of conceptualising in three dimensions. It is the pure science subject with the highest failure rate. There is some evidence that shows that the fit in terms of numerical preparation from some secondary schools insufficiently prepares the students for the actuality of studying Chemistry at this level. Biology is seen as challenging owing to its high lexical load, greater reliance on English language skills and wide-ranging specific lexis. The combined science module suffers the highest failure rate, reflecting the challenge of integrating science and the need to combine knowledge in preparation for moving into the next academic year.

A range of support strategies could better support the students in their academic transition providing integrated and multi-faceted support, but this needs to be operationalised from and integrated into the academic sphere. In terms of curriculum content and pedagogy, students can be engaged through motivational content and delivery methods, an increase in active learning, increased collaborative and small group teaching events. A range of learning experiences, regular attendance and appropriate and timely assessment support success in first-year medical school. These points reflect Chickering & Gamson's (1987) seven effective educational practices, which Huba & Freed (2000) describe as a learner centred paradigm, and Hockings (2010) as an inclusive learning and teaching approach.

Socially RCSI Bahrain appears to facilitate transition to a high degree, with students expressing no concerns, indeed appearing to socially transit and find social acceptance almost immediately.

The research now moves on to the final chapter which is model building and recommendations for practice.

Chapter Seven

Model Building and Recommendations for Practice

7.1. Introduction to Chapter Seven

This research has utilised Tinto's Model of Institutional Departure (1993) as a theoretical framework, as presented in Figure 1 on page 25. It has argued that this model lends itself to the investigation of failure, being a sub-category of, and an influencing factor in the traditional application of this model to the study of attrition, as discussed by Brunsten et al., (2000) in 2.5 on page 30. Through applying Tinto's Model of Longitudinal Departure to Foundation Year medical school in RCSI Bahrain, it is apparent that core concepts of Tinto's model are applicable to the study of success and failure, but that that a model specific to this context can be developed, to better suit the investigation of success and failure in Foundation Year Medical School in a Middle Eastern transnational context.

This chapter builds on previous discussion to redefine the findings in a diagrammatical form that represents the constructed model for success and failure in a transnational setting, taking central position in this is the constructed notion of the 'state of realisation' that has been identified through this research process. The chapter then moves on to consider the research findings and recommended interventions relating to the transnational setting, contextual cultural influence, and institutional responsibility in the transnational setting. It then presents the operational application of the theoretical findings with relation to the mission statement, resourcing, raising entry criteria, and revisiting the interview process. Consideration is then given to supporting students on the path to the constructed notion of the 'state of recognition', including understanding student intentions, anticipatory support, and extended orientation. This section ends with the presentation of a constructed academic support model. Recommendations are then given for further research on gender studies, before concluding comments and recommendations are presented.

7.2. Building the Theory

Drawing on the findings discussed in chapters four, five and six the clear message that evolves from the thematic analysis is the influence of the three core themes of student background; cultural, family and institutional influences; and the transition process on Foundation Year students' academic success or failure.

Specifically represented by the first theme of student background are the sub-themes of gender; entry qualifications; interview scores; English language competence; and the Medical Commencement Programme. The overall finding from this theme is that previous learning experience impacts Foundation Year performance. The factor with the greatest impact is English language competency, as measured by the IELTS examination. A noticeable and sustained effect of low English language is an over-dependence on translation. A further factor is the influence of secondary school academic achievement; with higher secondary school grades generally indicating better Foundation Year performance. This link is also apparent with regard to interview scores, with a trend appearing that students who gain a higher interview score achieve better academic performance in Foundation Year than those with lower interview scores. An additional sub-theme to emerge is the fit between secondary school and Foundation Year medical school. Students who enter from a more contiguous European model of secondary school curriculum experience a better academic fit than those from an Arabic secondary school experience. A further finding is that the Medical Commencement Programme, a bridging year of study at RCSI Bahrain, appears to provide a positive learning experience, which provides students with time to transition from secondary to third level education prior to the Foundation Year. The final and most unexpected finding from this research into student background is that gender appears to play a role in Foundation Year academic success. In contrast to findings in the wider literature, as discussed in 2.11b on page 43, male students perform better in the focus Foundation Year science modules and overall in Foundation year, than

female students. This surprising finding, which may stem from a contextual cultural influence, lends itself to greater investigation and further research.

The second key theme of cultural, family and institutional influences contains the sub-themes of cultural influence; family influence; motivation; goals and commitments; and a culture of belonging. It is apparent that culture in this transnational Middle Eastern setting impacts all aspects of a student's life, moulding the educational experience, beliefs systems and coping strategies. The Middle Eastern family can wield great extrinsic influence which can result in a decrease in motivation when students encounter academic difficulties. Preconceptions of medical school experience may inhibit the transition process. A result of this can be academic culture shock which can result in the adoption of an instrumental approach to studies. Students view RCSI Bahrain very positively, stating a culture of diversity and a corresponding strong sense of belonging and pride. This institutional culture of belonging promotes social transition and facilitates learning.

The third and final theme is making a successful transition. The main finding is the construction of the term the 'state of realisation' which is the point where students recognise and start to implement strategies which are associated with success at third level learning. Also incorporated are the sub-themes of a multi-faceted transition; academic culture shock; scientific fit; modes and strategies of learning; attendance; assessment of learning; learning communities; academic support; and social integration. It appears through thematic data analysis that academic transition is a challenging and multi-faceted experience for Foundation Year students, which is individually rather than collectively experienced. Challenges specific to the science modules are the lexical reliance of Biology and the challenge that this poses to students with lower English language and the impact of lower numeracy skills on Chemistry and Physics. The move from learning an individual science to integrated sciences is also a period of notable challenge for students. To help support students, a range of support strategies could be offered which are operationalised from the academic departments, not from an external department. Greater student engagement could be achieved through an

increase in active learning teaching methods together with an increase in small teaching group events. An increase in attendance together with more frequent formative assessment could help facilitate Foundation Year learning. Social transition seems to be unproblematic; a possible explanation for this is the large number of students who share the same Arabic cultural heritage.

Through applying Tinto's Model of Longitudinal Departure, it has evolved that the pre-entry factors of English language competency as measured through the IELTS scale and secondary school academic qualifications are pre-indicators of academic success in Foundation Year medical school. Interview scores and a more contiguous secondary school curriculum can also indicate greater Foundation Year success. Students who have followed the Medical Commencement Programme, prior to the Foundation Year seem to have had time and support in adapting and transitioning into medical school. Cultural and family factors are on-going influences on motivation, goals and commitments, whilst institutional culture sets the scene for transition and learning, enabling a culture of belonging and effective learning communities to evolve. Transition is a process that is not clearly defined in terms of length of process; it appears that whilst some student's transition within a week, others can take the academic year. This transitional process impacts on how students cope with academic culture shock and how they reach and develop their 'state of realisation'. The 'state of realisation' is a term which marks a key finding which has been developed through this research. It is the point at which students comprehend and utilise learning strategies and skills that characterise third level learning. The student moves from former dependence, which marks secondary level learning, to the greater independence required at third level learning. Social integration, although a key factor in transitioning to third level learning, was found to be an unproblematic process in this transnational context.

7.3. Developing a Transnational Model

The theoretical model for success and failure in Foundation Year Medical School in this transnational context is informed by both quantitative and

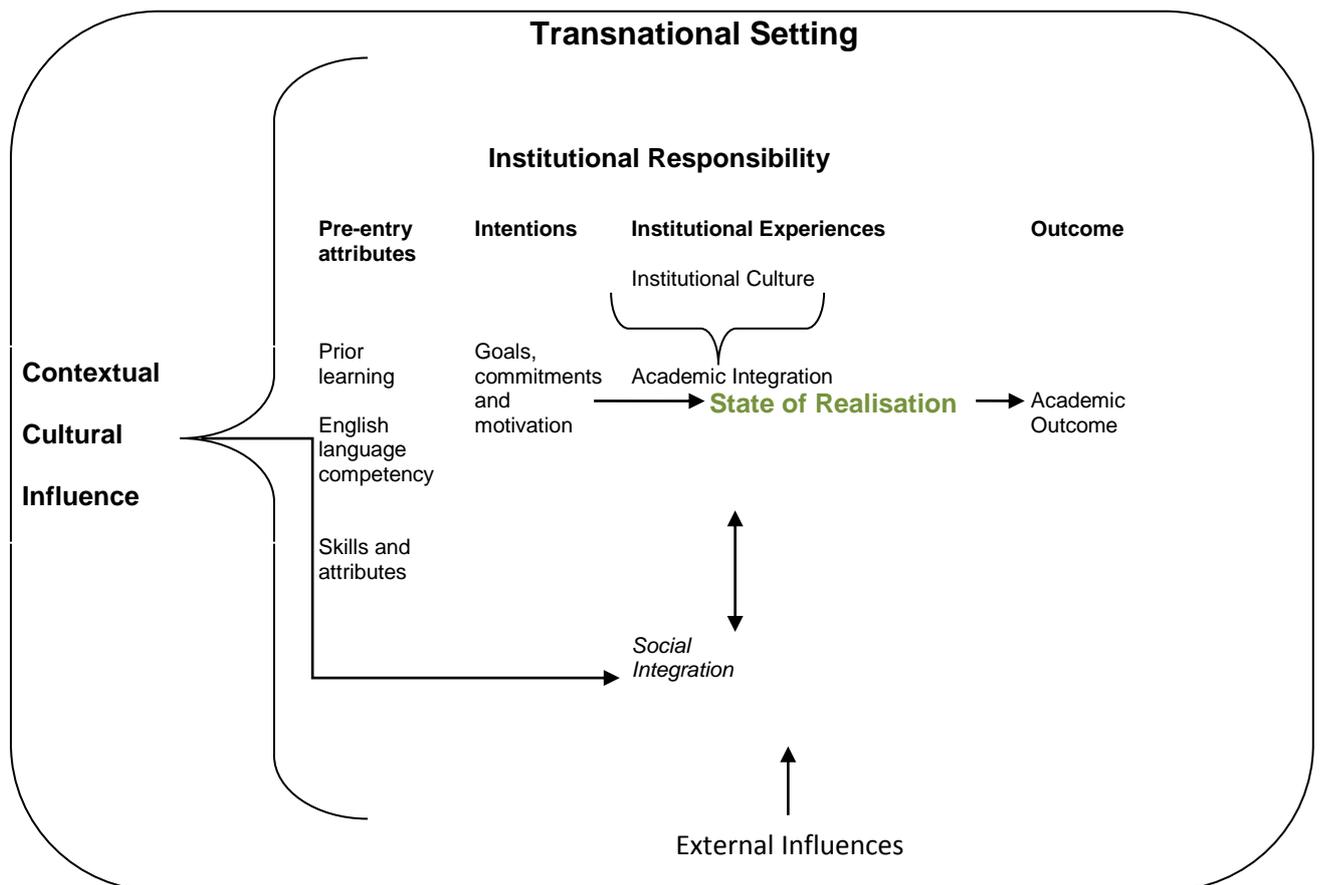
qualitative data collection methods and the resulting findings as discussed in chapters four, five and six. The theoretical framework which has guided this research and facilitated greater understanding of the student experience is Tinto's Longitudinal Model of Departure (1993), shown in diagrammatical form in Figure 1 on page 25.

In this transnationally situated context, academic failure and success are impacted by factors across a large domain, many of which can be mapped against the guiding theoretical framework of Tinto's Longitudinal Model of Departure (1993). Tinto's model includes pre-entry attributes as discussed in chapter four on pages 74 to 97; cultural, family and institutional influences discussed in chapter five on pages 98 to 108; and the student transitional experience as discussed in chapter six on pages 109 to 146. All of these influences combine to influence what Tinto (1993) refers to as the outcome. In Tinto's model the outcome is student attrition, whereas in this application the outcome is academic success or failure. Tinto describes his model as being applicable to all third level learning contexts, but acknowledges that it is most frequently applied to the first-year context, and it is this year, in the form of Foundation Year medical school, where it is applied in this research. Through integrating what has been a criticism of Tinto's work, which is the omission of the student voice, as discussed in 2.3 on pages 27 to 29, a picture has emerged regarding the student experience in Foundation Year medical school at RCSI Bahrain and through this the formation of the key finding which is the constructed notion of the 'state of realisation'. Through contextualising the research in a Middle East transnational setting, issues have emerged regarding the interplay of culture, pre-entry attributes and the transitional student experience to create a contemporary picture of this transnational Foundation Year medical school experience.

It is apparent that Tinto's model although broad in reach, lacks the emphasis that can fully aid in the understanding of student academic success and failure in Foundation Year Medical School in the transnational context. Although the importance of Tinto's works cannot be underestimated in providing many layers of understanding, Tinto (2006b) himself makes

reference to the underdevelopment of his theories and the potential for refinement. The transnational context of this research has brought specific issues to light which impact on student academic success and failure in this transnational medical school context. The empirical findings of this study have been evaluated against the framework of Tinto's model, allowing the proposal of a specific model, which is an adaptation of Tinto's model, for this context, shown in the following Figure 20. This constructed model illustrates the contextual elements of culture, pre-entry attributes, and student intentions and how the greatest challenge that student's encounter in their path to academic success, lies in their academic transition.

Figure 20: Model of Academic Success and Failure in a Transnational Context



The transnational model shown above, illustrates the fundamental role of the constructed term the 'state of realisation', which has emerged as the key finding from this research. This is the point at which students recognise and

implement learning strategies which are associated with academic success in third level learning. Cultural influence, discussed in chapter five on pages 98 to 108 frames the whole picture of the transnational academic experience. Students enter with an individual blueprint of prior experience; this blueprint includes prior learning and secondary school academic attainment, together with the specifically impacting factor of English language competency, as discussed in 4.6 on pages 84 to 91. Students' skills and attributes, discussed in chapter four on pages 74 to 97 are shown in this model under the sub-category of pre-entry attributes. These are factors that define their coping ability and link to their locus of control which drives their ability to adapt and develop. Demonstrated under the sub-section of intentions in the model are goals and commitments, and specifically different to Tinto's model in Figure 1 on page 25, is the statement of motivation. Motivation in this Middle Eastern transnational setting is closely influenced by culture and family, as discussed in chapter five on pages 98 to 108.

The next sub-category of institutional experience in the Model of Success and Failure in the Transnational Context in Figure 20 on page 152 focuses on institutional culture which frames this section. It is the institutional culture which shapes all aspects of the integration process from strategic policy documents to the approachability of staff. Unlike Tinto's model, shown in Figure 1 on page 25, where social integration is shown parallel to academic integration, this model recognises the vital role that social integration has in the transition process, but places it as an area of lesser concern owing to the findings from 6.11 on pages 142 to 144. The line of connection to contextual cultural influence demonstrates the reason for social transition being achieved rapidly and in an unproblematic manner in this transnational setting, as discussed in chapter five, pages 98 to 108. The process of academic integration, as discussed in chapter six on pages 109 to 142, is illustrated to display the protracted time that it can take; this academic interaction process can vary in time from days, to weeks, to months. Again this is experienced differently for each individual student. The point that marks the beginning of the end of academic transition is what has been constructed through this research study as a key finding which is termed the 'state of realisation' as

discussed in 6.10 on pages 137 to 142. This is the point where students recognise and implement learning strategies namely attendance; note-taking; lecture preparation; revision cycles; accessing available support, and move from translation and memorisation to understanding and learning. These are strategies that have been discussed in 6.5 - 6.9 on pages 122 to 137 as being associated with academic success. The 'state of realisation' does not occur overnight, it can be a process which takes time to move from comprehension to application.

External influences to the academic and social transition processes in Foundation Year medical school are shown to have a potential influence at any stage in the process, as shown in Figure 20 on page 153. Although not specifically discussed in this study, as they were not raised in the student interviews, it is important to acknowledge that external factors, including for example health and financial issues, can enter the equation unexpectedly and can potentially impact academic outcomes. These factors are inevitable factors of life that at times can have the potential to impact the student experience and academic outcome.

7.4. Research Findings and Recommended Interventions

Developing the themes identified in the Model of Academic Success and Failure in the Transnational Context, Figure 20 on page 152, the findings and recommended interventions of the research are presented. In line with the key data presented in the model, these include: the key finding of the 'state of realisation'; contextual cultural influence; transnational setting and institutional responsibility. Following this presentation, the findings and recommendations move on to discuss how the theoretical discussion based around the Model of Academic Success and Failure in a Transnational Context can be operationally applied in RCSI Bahrain.

7.4.a. The 'State of Realisation'

As discussed in 6.10 on pages 137 to 142, the term the 'state of realisation' has been constructed through the findings from this research and it is presented as an important finding. This state has been identified as a major step on the transitional ladder where students recognise the need to implement third level learning strategies and to access available support. Reaching the 'state of realisation' can take individual students differing lengths of time and it is an institution's responsibility to facilitate the learning process of any student it accepts. The following discussion addresses the steps needed to provide substantial and sustained provision to support students towards the 'state of realisation'. It considers the need to understand the contextual cultural influence; the transnational setting; and institutional responsibility. It then moves on to consider the required operational interventions to suitably support students on the path to the 'state of realisation'.

7.4.b. Contextual Cultural Influence

Culture frames the transnational context and is implicit in all aspects of the transnational student experience. Culture influences all aspects of the student's prior learning experience and their transnational academic and social interactions. As discussed in chapter five on pages 98 to 108, the component parts of the influence of culture have not been fully realised, but those that emerge from this research include family influence; motivation, goals and commitments, and an institutional culture of belonging. A result of this insight is that any interventions within a transnational setting must be framed against the individual context and be cognisant of the specific cultural influences. Reference is made to the cognitive accessibility of an academic staff member who shared the same cultural heritage as the student in part 6.9 on page 135. This raises the question as to whether a number of staff members in the first-year experience of the student's education

should be drawn from backgrounds that share similarities with those of the students to provide a scaffolded stepping stone into the transnational programme. Additionally, this may add additional support in terms of language transition from Arabic towards English. This provision could reduce barriers of access to staff support, facilitate avenues of cultural understanding and add clarity of understanding by reducing student's feelings of anxiety. This could form a key part of the bridge of localising the international as referred to in point 2.7 on page 33.

The understanding of cultural influences in transnational education is an important aspect in the contemporary international education network and marks a move away from viewing education with a national lens towards viewing it through a global lens as discussed by Miller-Idriss & Anderson Worden, (2010) in 2.7 on pages 31 to 35. This positioning is important, not only for the pedagogical good of the transnational student, but in the face of increasing world uncertainty and the vagaries of the Middle East that bridges countries, mindsets and religious belief. Transnational education creates a truly global community of practice and given the political uncertainty stemming from the Middle Eastern region, as discussed in 2.7 pages 31 to 35, greater understanding of the driving cultural influences is vital.

7.4.c. Transnational Setting

Liberalisation has occurred through international trade treaties and global issues transcend national boundaries and internationalisation is now a normative trend. Against this neo-liberal driven marketization of education, little research still exists as to the impact of teaching and learning in transnational campuses, the role of culture and the effect that such institutions can have in the roll-out of international third level education, the move away from methodological nationalism, and the function that education can have in uniting increasingly fragmented regions of the world.

In the face of the contemporary transnational expansion in education, this research goes some way towards extending knowledge in this field. Through applying quantitative and qualitative research methods, depth as well as breath of information has been investigated and insights into the student lived experience that has previously been described, in 2.7 on page 32, as isolated and lacking sufficient research (McBurnie & Ziguras, 2007), have been gained. Such research as this, marks an extension in understanding in the development of research regarding the transnational experience. Transnational education embeds multiple perspectives, which need to be specific to the context and which respect diversity and local influences. The findings of this research indicate the need for appropriate contextualisation of transnational education, with effective cultural integration and acceptance providing the grounding for effective learning communities to evolve.

The emphasis on the value of transnational education has traditionally been given to national economies rather than to the individual students. The true value of transnational education can only be realised when the emphasis is changed to the learning outcomes, pedagogical practices and to the challenges encountered by teaching offshore. The development of holistic approaches within a neo-liberal framework can help achieve this aim, and as discussed in this project, this must come from integration into institutional policies and strategies.

Little evidence exists of partnerships of research, this is indicative of an immaturity of transnational education as a research field as discussed by Mahoney, (2014) in 2.7 on page 32, and the research that exists does not focus on teaching and learning, but on globalisation, trade, quality and regulation. Particularly lacking is work on socio-cultural factors that shape the exchange of knowledge and the steps taken by staff to improve these aspects. While there are numerous benefits to transnational students such as high quality education, value of

qualification, and further intrinsic learning experience advantages, anxieties exist as to whether the educational experience is suitably tailored to the context and debates exist about the experience of learning and standards of teaching in transnational education. This research with its qualitative driven methodology has found that culture in the Middle Eastern context is intrinsic in all aspects of student life. Recognition, acceptance and adaptation of this fact are apparent in the pedagogical and interaction of Western staff with Middle Eastern students, a practice particularly apparent in long serving members of staff. Such cultural awareness creates the conditions for the successful application of the transposed western model of education to be effectively delivered. Respect and regard is evident, not only in avoiding the threat to *kibriya*' (Weir, 1994 p 948) as discussed in 5.2 on page 99, and the resulting loss of face, but creates a fertile ground for academic exchange and knowledge development and the base for what was described at the inaugural speech of RCSI Bahrain and discussed in 6.8 on page 134, as the aspiration for the students to be 'colleagues in learning', (O'Higgins, 2004).

7.4.d. Institutional Responsibility in the Transnational Context

As the student numbers and diversity increases in higher education, particularly in transnational settings, so do the corresponding failure rates. Failure and early departure from medical school not only have negative consequences for the students and stakeholders, but also have a range of economic and ethical reasons that should raise concern. The responsibility for failure is increasingly being recognised as being with the institution rather than with the student. In the past, students who failed and left were seen to be less motivated, less able and less willing to avail themselves of what an institution had to offer. It was the students who failed and not the institution. Work by Spady (1971) and Tinto (1975), as discussed in 2.2 on pages 24 to 27, made the connections between the academic and social environments and this started the movement in the shift of responsibility away from the

student and towards the institution. Through work by Astin (1975), Pascarella (1980), Pascarella & Chapman (1983), Pascarella & Terenzini (1980) discussed in 2.2 on pages 24 to 27, evolves the growing awareness that student involvement matters and it is of crucial importance in the first-year of third level learning. These works marked the infancy of understanding about student success and attrition, but lacked in complexity and depth, and much was drawn from quantitative studies with the student voice rarely being heard, as discussed in 2.3 pages 27 to 29.

As more regulatory bodies developed so did the policy references to the responsibility of the institution, for example, the Bologna Framework states that adequate provision should be made for a student to complete their studies (Conference of European Ministers Responsible for Higher Education, 2009). In practice the majority of applications of processes to enable student success were seen, and in many cases still are seen, as add-ons to the core academic experience, and as the responsibility student support staff rather than the academics.

These developments in transnational education require a whole institutional approach, as discussed in 2.2, on pages 24 to 27 (Castle & Kelly, 2004; Leask et al., 2005), through integrating academic, support and administrative operations throughout the whole of a transnational institution. The higher levels of failure in transnational institutions, as discussed in 2.7 on pages 31 to 35, (Mahoney, 2014), and the link between attrition and systematic malfunction in medical school (O'Neill et al., 2011), together with the paucity of research into the transnational student experience and the lack of empirical evidence on faculty perceptions of the student learning experience (Mahoney, 2014), requires a better understanding of what that student experience currently is in a transnational medical university. The student voice needs to be accessed, heard and acted upon.

Institutional responsibility for students starts before entry and continues until after graduation. Pre-entry responsibility can include the responsibility to provide potential students with sufficient information to inform choice about the institution and courses and shape expectations both in terms of what the institution expects from the students and what the student can expect from the institution. This notion of involvement should be embedded within the institutional vision and culture. Staff responsibility to engage and be engaging is a theme to be endorsed by senior management and actively supported and recognised. The embedding of this notion throughout policies, development, recognition and induction would ensure its placing as a core theme in institutional activities.

7.5. Theoretical to Operational

The findings now move on to the practical application of the theoretical discussions that have taken place throughout this research. The first area that is considered is the institutional mission statement, which is the guiding principle in all institutional operations. The second area is the challenge of resourcing interventions with minimal financial impact. The third and fourth areas address increasing entry criteria and revisiting the student interview process. Following on, the path to the 'state of realisation' is addressed and a constructed model of Foundation Year support is presented.

7.5.a. The Mission Statement

There will always be failure within academic institutions, but the challenge is to balance the widest possible access to medical school, this includes the transnational learning experience, whilst facilitating success. The commodification of education has stripped the educational process of the moral fabric of society and there exists a need to return to the fundamentals of education. Holistic approaches to education would help redress the pressures of the neo-liberal framework in which higher education, particularly in the transnational

setting, is located. A suitable place to start would be the guiding noble purpose statement, as discussed in 2.8 on page 36. This statement encompasses the core elements of an institution providing a path of intention that cascades down from strategic to operational level. The addition of the reference in bold to the following RCSI Bahrain noble purpose would provide an acknowledgement of responsibility to support the learning journey of the students.

“Building on the heritage of the Royal College of Surgeons in Ireland which was founded in 1784, we will enhance health in Bahrain, the other GCC countries and beyond through endeavour, innovation and collaboration in education, research and service.

*The primary mission of the RCSI Medical University of Bahrain is to inspire, educate and train competent and caring graduates who are well prepared to enter specialty training programmes and assume leadership roles in their profession. **We undertake to support the academic and holistic development of our students and scaffold their development from medical students to qualified doctors, offering support and guidance on their learning journey.** We undertake these activities to internationally recognised standards of excellence in teaching and research for the benefit of the health of the nations”. RCSI Bahrain (2013)*

The integration of stated commitment at strategic level would facilitate the implementation of the provision of a better-supported student journey. The placing of this mission within the noble purpose statement would change an institution’s angle on student support from being what is commonly perceived as being a freestanding entity, towards being integral to policy and practice.

7.5.b. Resourcing

The support of transitioning students to university is not a generally financially well-supported strategy and innovation needs to be utilised in order to be effective to any degree. This can include the increased use of existing students as peer mentors to aid transition (Andrews &

Clark, 2011), as discussed in 6.9 on pages 134 to 137. This utilisation of student ambassadors is seen to be an effective tool of integration as they are perceived to have more genuine insights, having recently experienced being new students and having passed through transition themselves.

Staff engagement is a crucial element in student engagement and resulting retention and academic success. As discussed in 6.9 on pages 134 to 137, this research recognises the key role that academic staff can have in the nurturing of a culture of belonging in RCSI Bahrain and in the provision of high quality academic support. However, introductions of new interventions can bring with them implicit criticisms of existing practices, along with an expanded workload for an academic staff who increasingly see higher student numbers and the associated extension of the existing workload. Frequently staff members who are heavily involved in student support can miss out in promotional terms with an emphasis on published research papers. Student support is time-consuming and so timetabling allowances, pay structures, resources and promotional career paths can create avenues which are inclusive of such focus.

This research has previously discussed the core role that academics take in the provision of academic transition support and this raises the question that with limited funding how this fundamental role is filled. It is suggested that academic staff involved in the first-year experience be offered flexible working options which could include the expectation that the working day and possibly the working week in the first semester, particularly at the beginning of the semester be extended, allowing staff members to credit hours and days to the annual leave allowance. A reduction of non-academic workload can be considered and shadowing of academics by non-academics in low intensity times of the year can enable training in selected areas of activity leading to a handover of some activities.

Mechanisms and associated resourcing to aid student success are becoming increasingly more important as the market demands of a neo-liberal, market-driven educational system become increasingly more apparent. Creative, flexible approaches can result in innovative, pliant application, where students benefit from appropriate support and academic staff workload does not increase.

7.5.c. Raising Entry Criteria

This research has found that a highly impacting factor in Foundation Year failure is English language competency, as discussed in 4.6 on pages 84 to 91. Accepting students with lower level language skills places them at a distinct disadvantage which is reflected throughout their core science grades. Currently the IELTS entry criterion is set at 5.5 and this could be incrementally raised to a minimum of 6.5. Students failing to meet these entry criteria can be offered alternative entry to RCSI through the Medical Commencement Programme. As discussed in 4.7 on pages 91 to 96, the Medical Commencement Programme has been found to be an appropriate and supportive learning experience which facilitates student transition. Additional to English language competency in appearing as an effective factor, is prior science learning, see 6.4 pages 114 to 122. This aspect is more complex given the many entry streams and previous secondary school curriculums that transnational cohorts follow. A move can be made to increase entry criteria; again diverting students who narrowly miss these criteria into the Medical Commencement Programme to fill any knowledge gaps in preparation for Foundation Year.

7.5.d. Revisiting the Interview Process

Interviews have been shown to be an indicator of potential student performance in 98% of students, as discussed in 4.5 on pages 83 to 84. This interview process is vital in pre-screening students. It is this information, together with pre-entry data that can start the beginning of

the academic tracking process of incoming students. Steps could be taken to provide greater training for interviewers and review the interview process in order to link the interview process to a tracking procedure. Interviews are a crucial process where a potential student encounters academics for the first time; it allows opportunity for pre-entry assessment and the establishment of the first step in the vertical progression towards becoming a medical doctor. What the institute desires from the student and what the student expects from the institution could be revisited. This is relevant especially in the market driven, consumer orientated environment of transnational education. There is a need to balance the neo-liberal framework of transnational education with the ethical and holistic responsibility that an institution has towards its students. Interviews, as the point of first impressions, can have a vital role in defining the nature of this on-going relationship.

7.5.e. Supporting the Path to the ‘State of Realisation’

A key finding from this research is the construction of the term the ‘state of realisation’ which describes the point at which students comprehend and start to implement the strategies associated with third level success. Essential aspects of supporting students on the path to realisation are the understanding of student intentions; anticipatory support; an extended orientation; and the application of an academic support model.

7.5.e.1. Understanding Student Intentions

Fully understanding, and in turn responding to student’s expectations, motivations, and differences in learning background, skills and knowledge base is critical in managing transition to medical school and in attaining what this research has termed the ‘state of realisation’. Failure to comprehend this ‘expectation-reality gap’, as discussed in 2.2 on page 26 (Dutton et al., 2011), can result in potentially negative effects on student

success. Understanding a students' prior learning experience aids understanding and helps facilitate greater knowledge of the starting point at which students start their third level educational experience. Understanding student intentions and motivations is also important, as it allows the fit of knowledge and learning to be made. Comprehension of where the student is starting from enables the path to the 'state of realisation' to be mapped out and articulated.

7.5.e.2. Anticipatory Support

Students sign up for medical school with little idea of what it involves. Pre-entry information and transitional support are believed to be key factors in promoting student success (Higher Education Authority, 2011), an important emphasis here is placed on pre-entry in the form of anticipatory support. An additional factor in terms of health care education is 'fitness to practice' (Health Professions Council, 2006), where students should be made aware prior to entry of the associated roles and responsibilities. Through early awareness, prospective students can consider the demands of a medical career and assess their own suitability and preparedness for this career. Through partaking in this pre-entry knowledge awareness path, it can be argued that students are experiencing the first of a range of interventions to facilitate their transition into medical school that will ultimately lead to the 'state of realisation'.

Proleptical intervention not only informs students, but is an effective method of assisting friendship formation prior to enrolment, this helps students to become engaged with the institution's social environment from an earlier stage than the traditional orientation week and move rapidly through the transition process. Enabling early social interaction can reduce anxiety, allowing greater effectiveness in the first few days and

facilitate the harnessing of the initial enthusiasm that students can display on entry, but lose quite rapidly. Additionally, it provides opportunities for students to build key relationships with academics through welcome videos, and understand the specific areas of research interest of staff. Early interaction provides key information about the first-year of study, along with the fundamentals of study and how these vertically fit with following years.

The literature points to varying methods for early intervention programmes, but to stay in greatest alignment with the digital generation would be to harness the power of social media as a tool to bridge the gap between acceptance and enrolment. Social integration, as discussed in 6.11 on pages 142 to 144, is not achieved in isolation from academic mainstream activities. The use of social media as a soft opening to academic life also facilitates student friendships, enabling a smooth transition and the foundations for a partnership in learning and teaching between student and staff. Consistency of message is an important component to consider as this enables students to feel secure and more convinced of the expectations required of them, the result being greater levels of satisfaction. The use of social media to facilitate communication and early social contact enables a non-threatening, contemporary, student driven experience to evolve.

7.5.e.3. Extended Orientation

Orientation and associated schemes to ease the entry into third level education and provide a path towards the 'state of realisation', could be extended beyond the first few days of a traditional orientation programme and can provide a vertical link from pre-entry towards professional practice. They should also facilitate social and academic aspects of the university and

integrate the active partaking of academic and key student facing administrative staff. Through this informal opportunity to meet from an early point and extending well through the year, the initial student experience is underpinned by a combined and integrated support network. This allows opportunities for students to meet each other, and for staff and students to meet, whilst engaging the students in the process of understanding the academic expectations and procedures. The focus of the orientation process could shift from what is traditionally a time when students passively receive chunks of information, towards a focus on building student capacity to engage through meaningful interaction with academics, and facilitating supportive peer relations, whilst building confidence and identity. The focus should not just be on the present, but on creating a vision which feeds into the aim of becoming a doctor and shows the students how each building block of learning works toward this ultimate goal. Pre-academic year interventions and programmes, as shown in Figure 21 on page 169, can be linked to the development of a student's professional identity to encourage explicit links between learning and future practice.

Student support needs to be substantive and sustained. An integral part of facilitating the path to the 'state of realisation' is the provision of a comprehensive and on-going academic support programme. It is towards the provision and design of such a programme that the discussion now turns.

7.5.e.4. An Academic Support Model

Reflecting on the review of the literature in chapter two, together with the findings on success and failure in Foundation Year medical school in a transnational location in chapters four, five and six, the following conclusions can be drawn. Academic performance in the Foundation Year experience of this

transnational medical school is influenced by multiple factors, some of which are inherent in the student and others in the institution. A student who is accepted for entry into an institution has the right to be provided with suitable, timely interventions and support, to scaffold any differences in prior learning and academic transition that they may encounter. The transition period appears to be a very personal journey for each student, with some navigating it rapidly and with ease, whereas for others it is a long hard journey until they reach the 'state of realisation' and start to both comprehend and implement third level skills and strategies. From this research study it is now understood that the key difficulty in the transition period lies with academic integration and the roots of this stem from prior learning, English language competency, and the skills and attributes that students enter first-year medical school with. These factors are influenced by contextual cultural influence, which in turn impacts the goals, commitment and motivation that students enter with. This combination of influences converges to shape the integration experience, an experience that is individual to each student.

Having gained greater understanding of this journey through investigation of quantitative and qualitative data through thematic analysis, this research suggests that an inclusive, mainstream approach needs to be adopted to enable student success in this transnational medical school. The constructed model presented in the following Figure 21, shows the support of the development of the student along the path to the 'state of realisation'.

into their first-year experience and beyond. At the same time it facilitates the proactive identification of 'at risk' students, indicators and periods when support should be targeted. A more dependent model in the first semester gradually leads to a more independent model in the second semester in preparation for vertical alignment with the following year of study.

Academic monitoring is a tracking system that can be instigated from student acceptance of offer, through the first-year experience and potentially beyond. Assessing the factors of secondary school grades, English language level measured through the IELTS score, together with interview grades as discussed in chapter four on pages 74 to 97, can be indicators of potential academic success. Introduction of early assessment in the first few weeks of the first semester allows a picture to emerge of the students' ability to understand, assimilate and learn curricula content. Together with attendance data, these factors can be combined to allow a picture to emerge of transition and academic performance.

Early introduction of group work activities that require meaningful interaction between student group members and academic staff can have an instant noticeable effect of reducing student anxieties. Additionally, a reduction in the transmission model of large-scale lectures and the incorporation of a greater number of small teaching events particularly at the beginning of the first semester can help support the transition process.

The identification of 'at risk' students alone is insufficient, it requires a link to a proactive suite of 'intrusive' advising. This amounts to proactive interventions including academic advice, remedial teaching, pastoral advice, social integration direction, and counselling. This means the development of integrated networks between academics, student services, and pastoral programmes. As this research has concluded that academic integration is the most problematic areas for

first-year students, the heart of this support network should come from the academics, with the emphasis on academic support. This structure would enable what Tinto (1987) refers to as 'academic alert' to emerge early enough to be useful. Engaging students in early tracking processes allows early support and intervention, a factor which may be particularly pertinent in the case of transnational students, who are moving from different learning backgrounds and may be ill-equipped to cope. Early and sustained monitoring of students and the provision of extensive academic support are essential aspects in the support of transnational students. An institution would not be following due diligence by accepting a transnational student, but failing to support the student along the transitional journey and towards the 'state of realisation'.

7.6. Research on Gender Studies

Before turning to the concluding comments and recommendations, it is necessary to highlight a key finding from this research into success and failure in Foundation Year medical school in this Middle Eastern transnational setting. This key and unexpected finding relates to the notably better academic performance in Foundation Year from males. This finding, as discussed in 4.3 on pages 79 to 81, contrasts with findings from the wider literature, as discussed in 2.11.b on page 43, and with the expectations of this research, stated in 2.12 on pages 48 and 49. The wider literature regarding gender and performance in medical school appears to indicate that females outperform males. However, as discussed in 4.3 on page 80, there are some cases where males and females perform equally, particularly in written and multiple choice examinations. This raises the question of performance and assessment type, which together with cultural influence would be an area which is of interest to investigate further. Of additional interest and possibly of potential relevance is the regional and cultural influence on gender performance, for example the higher levels of adult literacy evident in males and the higher percentage of males in general attending higher education in the Middle East region may be an element to consider as discussed in 4.3 on

page 81 by Davies, (2012). Gender and culture may create differing conditions in terms of student performance and as Khwaileh (2011 p1) notes 'gender differences have become on the hotlist of critical issues around the world', and possibly no where more so than the Middle East'.

Downing et al's., (2008) findings, discussed in 4.3 on page 80, that males outperform females in visuo-spatial ability and mathematical reasoning, are a pertinent consideration when considered together with Staff C's comments in 6.4.a on page 117, where both visuo-spatial ability and mathematical reasoning are aspects referred to as being crucial in Physics and Chemistry. An additional point with regard to gender is that in this research all the Foundation Years science faculty are male. This gender imbalance towards male members of faculty is evident in the modules analysed in this study, as presented in Figure 10 on page 72. This evident imbalance and its potential impact on students, both male and female, is an additional area of interest.

Gender and academic performance in medical school and in the wider field of third-level education in the Middle East is an aspect of great interest which has arisen from the findings of this research and one that warrants further investigation.

7.7. Concluding Comments and Recommendations

The ultimate aim of this research has been to investigate success and failure in Foundation Year Medical School in this Middle Eastern transnational context, with the view to gaining greater understanding of the predictors and impacting factors, in order to not only add to the body of academic knowledge, but to develop recommendations and interventions to better support academic attainment in Foundation Year. Returning to the research questions presented in 1.2 on page 21, the research has considered students previous learning experience and Foundation Year achievement and has linked this to aspects such as English competency, secondary school achievement and curricula, interview scores and gender. It has considered both student and academic staff perspectives to understand the complexities of the student Foundation Year journey. It has identified the personalised and varied experiences of the

transitional journey in Foundation Year medical school and uncovered the influencing factors. The findings of the research have been translated into operationally practical interventions suitable to the the contextual and cultural environment.

It has been widely accepted that academic and social integration is a key concept in the attrition of first-year university students that has been tried and tested in the West, but it was not known if this theory can be applied to the transnational context and the nuances that may arise because of the context. The conclusions from this research study find that Tinto's Longitudinal Model of Departure (1993) can be applied as a theoretical framework to understand factors that influence academic success and failure, which are classified as a sub-category of attrition. Through the application of Tinto's model, the research study has constructed a refined interpretation of this model that has greater appropriateness to understanding academic success and failure and the transitional journey in this transnational setting. It is this refined model that frames the key research finding of the 'state of realisation'. It is envisaged that this Model of Academic Success and Failure in the Transnational Context, shown in Figure 20 on page 152, could be applied and refined as a theoretical framework in further research to gain greater understanding of the first-year third level learning student transitional journey and support the path to their 'state of realisation'.

The summations of recommendations from this study are as follows. An institution holds the responsibility for supporting student success. All aspects of transnational education should be cognisant of the intrinsic influence of the local cultural environment. Support should start pre-entry and extend throughout the whole first-year and should provide a supported path towards the 'state of realisation'. Support should be academically driven and housed with a wide-scale design to encompass the whole cohort, whilst enabling tracking and identification of 'at risk' students and respond to the needs of these students. As the first-year progresses a gradual change in the balance of high-level integrated academic support can shift to towards support of more independent learning, to better prepare students for vertical integration with

the next year of study. Accessing the student voice enables richness, depth and understanding of the student journey to be heard and acted upon. Prior learning and in particular English language ability has been shown to impact academic success. Gender and academic success in Foundation Year has emerged as an unexpected finding, and there is some evidence to link these findings to cultural influence, which is an area that it would be of great interest to further investigate.

To conclude, as research on academic success and failure and the first-year transitional journey has developed over the years on a more complex level, thought has been given to the non-traditional student, amongst which the transnational student must count. With the burgeoning transnational market comes expanding knowledge, amongst which is the growing perception that the offering of places to non-traditional transnational students requires a responsibility that begins, rather than ends at the point of student entry into the institution. An important aspect of the holistic and ethical responsibility that is implicit in the establishing and delivering of transnational programmes is of maximising the support of students through their first-year transition experience towards academic success. In the words of Vincent Tinto (2008), offering students access to higher education with insufficient support, is not an opportunity no matter how it is dressed.

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Appendices

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Appendix 1: Staff and Student Interview Questions

Student Interview Questions

	Question Stage	Purpose	Aim
1	Opening question	Participants should be given the opportunity to introduce themselves	Appreciation for their time Introductions State all information is anonymous and will have no negative impact, State purpose of research Build rapport
2	Introductory questions	Introduce the general topic of the discussion and stimulate the conversation	How do you feel about your FY experiences? (grand-tour question) What were your experiences when you first joined the FY? (mini-tour question)
3	Transition questions	Move the participant into the focus of the discussion	How did your experiences at school prepare you for FY? (example question) How has your level of English impacted on your studies? How important is it for you to become a doctor? (motivation question)
4	Key questions	Concerned with the focus of the interview	Could you tell me about your academic achievement in FY? (experience question)? How did you feel about your summative examination results in FY? (feeling question) How could you have improved your academic achievement?(example question) Which areas of the curriculum do you find most challenging? Could you tell me about the levels of support you experienced from academics, peers and the support centre in FY? (experience question) Could you tell me about making friends at RCSI? What kind of things could have improved your experience of learning in FY? (experience question)
5	Ending questions	Give the participant the opportunity to make a final statement	Could you tell me about how you feel about being a part of RCSI? (feeling question)
6	Final questions	Ask the participant to add things they have not considered during the interview	Could you tell me anything else about FY and RCSI? (grand tour question)
7	End	Enable to participant to leave feeling valued	Appreciation and state purpose of research and their role in change

Academic Staff Interview Questions

	Question Stage	Purpose	Aim
1	Opening question	Explain the purpose of the interview	Appreciation for their time Introductions State all information is anonymous and will have no negative impact, State purpose of research Build rapport
2	Introductory questions	Introduce the general topic of the discussion and stimulate the conversation	How do you feel about the student experience on the FY? (grand-tour question)
3	Transition questions	Move the participant into the focus of the discussion	Which areas of your subject area do students find most challenging?(example question) How do you feel about the ways in which students are examined in your subject area? (feeling question)?
4	Key questions	Concerned with the focus of the interview	What factors influence student success and failure on FY?(example question) How does student prior learning experience influence learning on FY? (example question) How does student language ability impact learning in your subject area? (example question) How could students have improved their academic performance?(example question) Could you tell me about the levels of support offered to students?(experience question) How could we improve the student experience of learning in FY? (experience question)
5	Final questions	Ask the participant to add things they have not considered during the interview	Could you tell me anything else about the student experience on FY and in RCSI? (grand tour question)
6	End	Enable to participant to leave feeling valued	Appreciation and state purpose of research and their role in change

Appendix 2: Participant Information and Consent Forms

Consent Form

Investigating student experience of success and failure in Foundation Year at RCSI Bahrain

If you are willing to take part in this research project please tick the box, complete the details below and return the signed form. At any time during the research you are free to withdraw and to request the destruction of any data that have been gathered from you, up to the point at which data are aggregated for analysis.

The results of any research project constitute personal data under the Data Protection Act. They will be kept secure and not released to any third party. All data will be destroyed once the project is complete.

I am willing to take part in this research, and I give my permission for the data collected to be used in an anonymous form in any written reports, presentations and published papers relating to this study. My written consent will be sought separately before any identifiable data are used in such dissemination.

Signing this form indicates that you understand the purpose of the research, as explained in the relevant *Information Sheet for Interested Participants*, and accept the conditions for handling the data you provide.

Please include full details of your preferred telephone number and preferred email address:

.....
.....

Name:

Signed:

Date:

Please return the completed form by email to: cholden@rcsi-mub.com

With thanks Caroline Holden



Information Sheet for Interested Participants

Project Title

Investigating student experience of success and failure in Foundation Year.

This research study investigates student success and failure in Foundation Year at RCSI Bahrain. It is a study that investigates student success through student data and also through interviewing students and staff. Both outcome findings will be compared to see if a relationship occurs between the student and staff perception of academic success and the institute measurements

The reasons for Sending this Information Sheet to You

In responding to the need to understand the student experience, I am hoping that you will join my research project. For this reason, I am sending you this information sheet and formal invitation to take part in the study. Here, I explain some further background to the study and also what participation will involve for you. If you have any queries about any of the information provided here, please get in direct contact with me at cholden@rcsi-mub.com, tel. 17351450 Ext. 3020 before you return the *Consent Form* to discuss such concerns and queries. You may decline to participate in the study without giving reasons or incurring displeasure or penalty.

Further Details of the Study

I am adopting a participatory quantitative and qualitative methodology for this research project, and I am looking for Foundation Year students and staff to attend semi-structured interviews. Your reflection on the student experience on the Foundation Year will provide important data for the study.

Your interview will be scheduled in the period March 2014-May 2014. Your interview will take approximately 30 minutes.

What Participation Will Involve for You

- To attend an interview with myself (Caroline Holden) which will last approximately 30 minutes. The recording of the interview will be thematically analysed on an anonymous basis together with academic and student data to compare how the student experience correlates to the academic outcomes.

Benefits to you of Participating in this Study

It is hoped that by participating in this study, your knowledge of your own learning and experience will increase. In addition, you will contribute to the professional development of the Foundation Year at RCSI Bahrain by informing future practice.

Disadvantages of Participating in this Study

The immediate disadvantage for you of participating in this study is the time commitment required to participate in the interviews. The interview will take approximately 30 minutes.

Is There any Recompense for Participation?

There is no financial recompense to you for participation in this study. The benefits and rewards will hopefully be seen in terms of your enhanced understanding of your own learning and experience.

What will Happen with the Results of the Study?

The results of the analyses of all data obtained will be written up and presented as part of my doctorate studies at the Institute of Education in London. They will also inform future Foundation Year programme design.

How to Withdraw from the Study?

You can withdraw at any point from this study without giving a reason or incurring displeasure or penalty simply by e-mailing me at cholden@rcsi-mub.com. At that point you will be asked whether or not you agree to the data you have provided through participation in the study being used, or whether you would prefer all your data to be deleted and removed from the study. If you opt for all your data to be removed, you will not be included in any of the statistics provided in any of the study reports.

Confidentiality of Data

All data collected as part of the study will be anonymised by not revealing names or numbers and by using a coding system devised to be used in any written reports relevant to this study. Your personal details will only be kept by us on my password-protected RCSI PC for the duration of the study. Two months from completion of the study, all your personal details will be removed entirely from my computer.

Complaints or Comments

If you decide to participate in this study, and you encounter difficulties, or would like to make a complaint, a comment or a suggestion for improvement, if you feel able to do so you can contact me directly (see above for the contact details). If however, you felt it was more appropriate to speak to a third party, you can raise any concerns with **Professor Joe Mc Menimin** (jmcmenamin@rcsi-mub.com, tel. 17351450 Ext. 2340).

Thank very much for your time

Caroline Holden

Appendix 3: Overview of Foundation Year Curriculum 2010-2013

Semester I

Module 1: (21 Lectures)

Introduction to Medical Physics [5 credits]

Introduction to Physics

- M 1.1 Introduction to Physics in the Health Sciences.
- M 1.2 What is a measurement?
- M 1.3 Electromagnetic Radiation – Use in therapy & diagnosis.

Mechanical Injury

- M 1.4 Physics of motion.
- M 1.5 Impulse & automobile design.
- M 1.6 The physics of automobile accidents.
- M 1.7 The physics of gunshot injuries.

Medical Imaging

- M 1.8 Medical Imaging: Overview of key factors and considerations.
- M 1.9 Ultrasound 1 - Basic principles and instrumentation.
- M 1.10 Ultrasound 2 - Therapeutic applications.
- M 1.11 Ultrasound 3 – Doppler Effect & Blood Flow Measurement
- M 1.12 Thermography and Photo Thermal Therapy.
- M 1.13 Magnetic Resonance Imaging 1.
- M 1.14 Magnetic Resonance Imaging 2.
- M 1.15 .Production of X-rays.
- M 1.16 Absorption of X-rays and contrast media.
- M 1.17 Radioactivity and Medicine.
- M 1.18 Radiation safety, dosimetry, treatment planning.
- M 1.19 Lasers 1: Structure and Operation.
- M 1.20 Lasers 2: Laser-Tissue interactions, medical applications, Oximetry.
- M 1.21 Physical principles of modern microscopy.

Module 1 Laboratory Practicals

M1 (Lab 1): Measurement and Data Analysis.

7 x 1 hour tutorials

Module 2: (22 Lectures)

Introduction to General, Medicinal and Pharmaceutical Chemistry [5 Credits]

- M 2.1 Chemistry in Medicine and the Health Sciences: An introductory lecture.
- M 2.2 Matter: The basis of life. Isotopes.
- M 2.3 Electronic configurations of atoms and ions of physiological importance.
- M 2.4 The Periodic Table: trends and properties.
- M 2.5 Chemical equations and reactions.
- M 2.6 Redox reactions: energy-producing reactions at the molecular level of life.
- M 2.7 Ionic bonding and the 'electrolyte status' of body fluid.
- M 2.8 Covalent bonding in physiologically important ions and molecules.
- M 2.9 Predicting shapes of physiologically important ions and molecules using VSEPR theory.
- M 2.10 Understanding the structures of physiologically important ions and molecules using hybrid atomic orbitals'
- M 2.11 Intermolecular interactions: The medical importance of water in the body.
- M 2.12 Composition of physiological solutions.
- M 2.13 Concentrations in clinical practice – Blood analysis technology
- M 2.14 Introduction to organic chemistry I - functional groups, isomers (geometric, structural & optical).
- M 2.15 Introduction to organic chemistry II.

- M 2.16 Alkanes I: Structural isomers and homologous series in organic chemistry.
M 2.17 Alkanes II: Free radical chain reactions; an example of an organic reaction mechanism.
M 2.18 Introduction to chirality: molecules in three dimensions. 'What happens to molecules when they look in the mirror?'
M 2.19 Assignment of (*R*)- and (*S*)-configurations.
M 2.20 Applications of chirality, enzymes, chiral drugs (thalidomide, ibuprofen, penicillamine).
M 2.21 Alkyl halides I: Structures and an introduction to nucleophilic substitution reactions.
M 2.22 Alkyl halides II: Nucleophilic substitution reactions of alkyl halides. Organohalogen drugs and their effects on DNA.

Module 2 Laboratory Practicals

M2 (Lab 1): Chirality in relation to drugs and their biological activity

M2(Lab 2): Molar concept, Biological solutions, Volumetric analysis, Redox reactions, Molecular shapes

7 x 1 hour tutorials

Module 3: (21 lectures)

Introduction to Human Biology [5 Credits]

M 3.1 Introduction to Biology in Medicine and Allied Health Sciences.

Biological molecules of importance

M 3.2 Biological molecules: Carbohydrates.

M 3.3 Biological molecules: Proteins.

M 3.4 Biological molecules: Lipids and Nucleic acids.

Biology of the cell

M 3.5 Cell Ultrastructure: Cell Wall, Plasma Membranes.

M 3.6 Cell Ultrastructure: Nucleus.

M 3.7 Cell Ultrastructure: Mitochondria, Endoplasmic reticulum.

M 3.8 Cell Ultrastructure: Endoplasmic reticulum, Ribosomes, Golgi apparatus.

M 3.9 Cell Ultrastructure: Membrane bound vesicles and granules, Cytoskeleton.

M 3.10 Cell Ultrastructure: Centrioles, Cilia, Cell junctions.

M 3.11 Cell Function: Membrane transport.

M 3.12 Cell Function: Cell division and the Cell cycle.

Genetics and heredity in medicine

M 3.13 Genetics as information flow, the human genome; DNA structure and replication.

M 3.14 Transcription: RNA polymerases, prokaryotic RNA processing.

M 3.15 Translation: the prokaryotic ribosome; protein synthesis, antibiotic inhibitors.

M 3.16 Transmission genetics: Chromosomes, Meiosis.

M 3.17 Transmission genetics: Mendelian inheritance.

M 3.18 Transmission genetics: Linkage and crossover.

M 3.19 Transmission genetics: Chromosome mapping; Multiple alleles.

M 3.20 Transmission genetics: X-linkage and Population genetics.

M 3.21 Transmission genetics: Population genetics, Polymorphism and Chromosomal defects.

Module 3 Laboratory Practicals

M3(Lab 1): Introduction to Microscopy, use and care of the microscope, preparation and examination of various objects. Microorganisms and Disease – preparation of bacterial cultures; microbiology of the environment.

M3(Lab 2): Genetics; mitotic stages in hyacinth root tip; Human Genetics, use of Hardy-Weinberg equation to calculate allele frequency from observed class data on tongue rolling and tasting ability, Widows Peak and Attached earlobes.

7 x 1 hour tutorials

Module 4: (24 lectures)

Introduction to Disease, Diagnostics, and Therapeutics [5 Credits]

Humans and Disease

- M 4.1 Diversity of living things; a review.
- M 4.2 Microorganisms: a review of disease causing bacteria.
- M 4.3 Microorganisms: bacteria continued; anti-microbial drugs. Viruses - morphology, propagation; diseases.
- M 4.4 Microorganisms: Subviral particles, review of Fungi; Medical mycology.
- M 4.5 Parasitism, Symbiosis and Disease.
- M 4.6 Protozoa and disease: Trypanosomes.
- M 4.7 Protozoa and disease: Parasitic amoebae.
- M 4.8 Protozoa and disease: Sporozoans.
- M 4.9 Multicellular organisation: an overview.
- M 4.10 Helminths and disease: human schistosomiasis, liver flukes.
- M 4.11 Human intestinal nematodes; human filariasis.
- M 4.12 Arthropods Insects and disease

Metal Based Therapeutic Agents

- M 4.13 The basis of coordination chemistry and chelating agents.
- M 4.14 Chelating agents and chelates.
- M 4.15 Wilson's disease and its treatment. Heavy metal toxicity and its treatment.
- M 4.16 Iron chelation therapy.
- M 4.17 Platinum complexes as anti-cancer agents. Discovery and mechanism of action of cisplatin.
- M 4.18 Second-generation platinum drugs. Gold complexes to treat rheumatoid arthritis.
- M 4.19 High and low spin complexes. Biological significance.
- M 4.20 Cytochrome c and cytochrome P-450; spin state and oxidation state changes.

Ionizing Radiation: diagnostics and therapy

- M 4.21 X-ray imaging.
- M 4.22 X-ray therapy.
- M 4.23 Scintillation, Gamma Cameras and organ function.
- M 4.24 Positron Emission Tomography: Principles and use. Instrumentation.

Module 4 Laboratory Practicals

M4(Lab 1): Examination of Bacterial Cultures; preparation and staining of bacterial cells, Gram stain; examination of exposed contact plates for bacterial and fungal colonies; *Penicillium glaucum*

M4(Lab 2): Lambert – Beer Law

M4(Lab 3): Parasites and vectors of disease ; including microscopic structures and life cycles: Mosquitoes, Trypanosomes and Schistosomes, Ticks, Lice and Mites

M4(Lab 4): Metals in Medicine

7 x 1 hour tutorials

Module 5: (16 Lectures)

Human Systems I - Skin/Musculo-Skeletal [5 credits]

The Skin

- M 5.1 (P) Heat and temperature distributions within the body.
- M 5.2 (P) Heat transfer mechanisms.
- M 5.3 (P) Regulation of body temperature.
- M 5.4 (B) Integument: Epidermis, Dermis.
- M 5.5 (C) Transdermal delivery of drugs.

Musculo-skeletal system

- M 5.6 (B) Skeleton: Bone, ossification; Somatic skeleton.
- M 5.7 (B) Introduction to Bioengineering
- M 5.8 (P) Bone structure and elastic properties of material.
- M 5.9 (P) Common bone and joint problems.

- M 5.10 (P) Skeletal lever systems.
- M 5.11 (P) Mechanical balance and stability.
- M 5.12 (B) Muscular system: Anatomical muscles, muscle physiology.
- M 5.13 (B) Muscular system: Ultrastructure of striated muscle; physiology and biochemistry of movement.
- M 5.14 (P) Physics review lecture.
- M 5.15 (P) Friction in diarthrotic joints.
- M 5.16 (C) Bone: calcium, biominerals and treatments for osteoporosis

Module 5 Laboratory Practicals:

M5(Lab 1): Histology of Skin, cartilage and bone. Constituents of Bone

5 x 1 hour tutorials

3 hours directed online tutorials

Module 6:

Professionalism in the Health Sciences I [5 credits]

Part A: Core Programme (All Students):

Note: Online lectures highlighted in red.

- M6.1 Introduction to Professionalism
- M6.2 Induction – study skills /academic skills - Delivered in Orientation
- M6.3 Information & communication in Healthcare**
- M6.4 Induction – study skills / academic skills - Delivered in Orientation
- M6.5 Information & communication in Healthcare- Introduction**
- M6.6 How the internet has changed communication**
- M6.7 An introduction to Clinical/healthcare/medical terminology**
- M6.8 An Introduction to Bahrain Healthcare system
- M6.9 Ethics 1
- M6.10 Critical analytical skills 1
- M6.11 Evaluating websites & information online**
- M6.12 Searching the web, tools and techniques**
- M6.13 Ethics 2
- M6.14 Critical analytical skills 2
- M6.15 Literature review, library skills & references**
- M6.16 Ethics 3
- M6.17 Academic writing
- M6.18 Using PowerPoint**
- M6.19 Delivering an effective PowerPoint presentation**
- M6.20 Introduction to reflective practice
- M6.21 Plagiarism, copyright, intellectual property & copyright**
- M6.22 Critical analytical skills 3
- M6.23 Databases & Introduction to Patient record**
- M6.24 Data protection, privacy & security**
- M6.25 Medical imaging, signalling, data transfer & storage**
- M6.26 Introduction to Bioinformatics**

Part B (i): Group project activity (Non-Language Program Students Only)

Based on themes related to the topics covered in the module, the group project activities require students to demonstrate abilities to work in teams effectively, organise time, carry out & present research, critically analyse research & present it to acceptable standards avoiding plagiarism.

Part B (ii): Inter-Professional Education Stream (Non-Language Program Students Only)

B(ii)	Session 1	Introduction to Inter-Professional Education
B(i)	Session 2	Students will view a documentary entitled 'A Boy Called Alex'
B(i)	Session 3	Preparation of a Patient Safety Leaflet
B(i)	Group Activity	Students will work together in small groups to produce a patient safety leaflet on cystic fibrosis and to describe the role of the various healthcare professionals.

Part C: Language Programme Stream (Language Programme Students Only)

This course is part of Modules 6 and 12 and has been designed to address the language needs of the students of lower English abilities. The learning objectives of the English programme are linked to the themes in the course sections of Professionalism and support students learning in other medical modules. The linguistic materials have been tailored to assist the students in mastering medical terminology as well as answering examination questions. The core sections of the course and the specific learning objectives for each semester are listed below:

a. Medical Terminology

- Familiarise with the terminology used in lectures
- Study specific lecture content in terms of vocabulary
- Improve understanding of the lecture content
- Provide academic support for the medical input

b. Understanding Academic Questions

- Identify key words in academic questions
- Recognise different types of academic questions
- Decide what information is needed to answer specific questions
- Provide academic support for the medical input

c. Exam Preparation

- Recognise the importance of using predictive skills
- Recognise the importance of logical deduction
- Interpret what is required to answer short note questions

d. Answering Examination Questions

- Interpret academic questions
- Understand what is expected in an academic short note/ MCQ answer
- Understand the need to answer the question fully
- Recognise what is a good answer
- Understand ways of increasing student efficiency

e. Presentations

- Propose guidelines for creating an effective presentation
- Discuss format of a presentation
- Familiarise with some useful phrases used in presentations

Semester II

Module 7: Chemical Processes involved in Biological Systems [5 credits]

- M 7.1 Alkenes: Structures, properties and and geometric structural isomers.
- M 7.2 Alkenes in nature (Vitamin D₃, β -carotene, testosterone, the chemistry of vision) and reactions of alkenes.
- M 7.3 Alkynes: Structures, properties and reactions. Alkyne-based drugs.
- M 7.4 Aromatic hydrocarbons I: Structures and reactions.
- M 7.5 Aromatic hydrocarbons II: Structures and reactions.
- M 7.6 Medicinally important aromatic compounds e.g. aspirin, paracetamol.
- M 7.7 Heterocyclic compounds and the structure of nucleic acids.
- M 7.8 Alcohols and their toxicity. Oxidation (*in vitro* and *in vivo*). Phenol - the first antiseptic to be used in surgery. Ethers, crown ethers and antibiotics.
- M 7.9 Carbonyl compounds: properties, structures and nucleophilic addition/condensation reactions.
- M 7.10 Carbonyl compounds: other reactions and physiologically important compounds.
- M 7.11 Carboxylic acids.
- M 7.12 Lipids, part 1 - Fatty acids and glycerides.
- M 7.13 Lipids, part 2 – Phospholipids, Non-glycerides and complex lipids
- M 7.14 Amides, acid chlorides and anhydrides
- M 7.15 Amines; basicity and physiological activity
- M 7.16 Naturally-occurring amino acids: structures, chirality, acid/base properties, classification according to side chain.
- M 7.17 Peptides (peptide bond formation and hydrolysis, some naturally-occurring peptides).
- M 7.18 Proteins (primary, secondary, tertiary and quaternary structures).
- M 7.19 Carbohydrates I: Monosaccharides: structures and reactions. Blood sugar.
- M 7.20 Carbohydrates II: Disaccharides: lactose and lactose intolerance.
- M 7.21 Carbohydrates III: Polysaccharides: applications, galactosaemia, diabetes.
- M 7.22 Factors affecting reaction rates and the rate equation.
- M 7.23 The rate law and the orders of reactions I.
- M 7.24 The rate law and the orders of reactions II.
- M 7.25 Collision theory and molecularities of reactions.
- M 7.26 Catalysis and enzymes.
- M 7.27 Driving forces behind chemical & biological reactions.
- M 7.28 Importance of free energy in biochemical processes.

7 x 1 hour tutorials

Module 8: Human Systems II – Nervous System/Special Senses [5 credits]

Nervous system

- M 8.1 (B) Nervous system: Neurons, myelin, Nerves.
- M 8.2 (B) Nervous system: Neurophysiology; Chemical synapses.
- M 8.3 (B) Nervous system: Neurophysiology of the synapse; PNS; Visceral nervous system.
- M 8.4 (B) Nervous system: Autonomic nervous system; Cranial nerves; Brain.
- M 8.5 (P) Nerve Conduction.
- M 8.6 (P) Physiological response to electrical current, electrical safety.
- M 8.7 (P) Electrocardiogram (ECG).

- M 8.8 (P) Pacemaker and Defibrillator.
 M 8.9 (C) Hormones and Neurotransmitters.

The Ear

- M 8.10 (B) The Ear - structure and function, physiology of hearing.
 M 8.11 (P) Frequency, sensitivity and detection.
 M 8.12 (P) Amplification processes, hearing aids.
 M 8.13 (P) Auditory localisation, anti-noise.
 M 8.14 (P) Resonance effects
 M 8.15 (P) Speech production.

The Eye

- M 8.16 (B) The Eye - structure and function, trichromatic theory of colour vision, colour blindness.
 M 8.17 (P) Refraction, Fibre-Optics and Endoscopy.
 M 8.18 (P) Eye and Vision.
 M 8.19 (P) Optical defects of vision and vision correction.
 M 8.20 (C) The chemistry of vision.

Olfactory & Gustatory

- M 8.21 (B) Sense organs: Mechanoreceptors and Chemoreceptors.

7 x 1 hour tutorials

Module 9: Human Systems III - Cardiovascular/Immune/GIT/Excretory Systems [5 Credits]

Cardiovascular system

- M 9.1 (B) The systematic circulation, blood vessels, capillary networks.
 M 9.2 (B) Blood flow and fluid exchange; Oedema; Lymphatic system, lymph, cancer spread.
 M 9.3 (B) Blood cells, leucocytes, leukaemia; Erythrocytes; Blood coagulation, haemophilia.
 M 9.4 (B) The Heart, structure, physiology; Cardiac cycle; Arterial blood pressure, cardiac failure.
 M 9.5 (P) CVS 1 – Static fluids and fluid pressure.
 M 9.6 (P) CVS 2 – Blood pressure and its measurement.
 M 9.7 (P) CVS 3 – Continuity Principle in the CVS.
 M 9.8 (P) CVS 4 – The Bernoulli Principle in the CVS.
 M 9.9 (P) CVS 5 – Viscous effects and blood flow in the CVS.
 M 9.10 (P) CVS 6 - Mechanical work done by the heart.

Immune system

- M 9.11 (B) Immunology - self and non-self; Non-specific defence mechanisms, inflammation, phagocytosis; Specific defence mechanisms, cell-mediated immunity.
 M 9.12 (B) Antibody-mediated immunity; Antibodies, complement, anaphylaxis; Vaccination; Allergy.
 M 9.13 (C) Antibiotic therapy (β -lactam antibiotics)
 M9.14 (C) Resistance to β -lactam antibiotics

Gastrointestinal tract

- M 9.15 (B) Alimentary canal, ingestion, oesophagus, stomach, ulcers.
 M 9.16 (B) Small intestine, histology, cytology; Pancreas, pancreatic secretions.
 M 9.17 (B) Intestinal enzymes; Liver, hepatitis, cirrhosis; Large intestine.
 M 9.18 (P) The body as a machine/engine.
 M 9.19 (C) Introduction to Human Nutrition. The Macronutrients.
 M 9.20 (C) Food, Energy and Calorimetry
 M 9.21 (C) Essential Micronutrients - the Role of Micronutrients in the Heart and Circulatory system.
 M 9.22 (C) Drug metabolism.

Excretory system

- M 9.23 (B) Kidney - structure; Glomerular filtration, Tubular function.
- M 9.24 (B) Tubular reabsorption, concentrating mechanism; Secretion; Control, renal failure.
- M 9.25 (C) Haemodialysis and dialysis dementia.

7 x 1 hour tutorials

Module 10: Human Systems IV - Reproduction/Endocrine/Respiratory [5 Credits]

Module Coordinator: Dr Kevin Culligan

Biology of Reproduction & Endocrine system (B)

- M 10.1 Sexual reproduction: Embryological origins; Male system.
- M 10.2 Sexual reproduction; Female reproductive system; Ovaries; Spermatogenesis.
- M 10.3 Sexual reproduction: Spermiogenesis, Spermatazoa, Oögenesis; Fertilization.
- M 10.4 Sexual reproduction - Embryology: Syngamy; Pre-Embryonic cleavage, Implantation.
- M 10.5 Endocrinology: Endocrine systems; Hormones; the Pituitary.
- M 10.6 Endocrinology: Hormones of the Adenohypophysis and Neurohypophysis.
- M 10.7 Endocrinology: Thyroid structure hormones and disease.
- M 10.8 Endocrinology: Pancreatic Islets of Langerhans; Adrenal gland.
- M 10.9 Endocrinology: Hormones of the Gonads, Oestrous and menstrual cycles

Respiratory

- M 10.10 (B) Respiratory system: Respiratory pathways; Mechanism of ventilation.
- M 10.11 (B) Respiratory system: Regulation of respiration; Gas transport.
- M 10.12 (P) Gas laws - clinical relevance, gas pressures within the body.
- M 10.13 (P) Barotrauma (decompression sickness, etc).
- M 10.14 (P) Hyperbaric gas toxicities, therapeutics, pneumothorax.
- M 10.15 (C) Osmosis, Osmotic equilibrium: haemolysis and crenation.
- M 10.16 (P) Gas laws and breathing.
- M 10.17 (C) Chemical equilibria and physiological consequences.
- M 10.18 (C) Solubility Equilibria
- M 10.19 (C) Haemoproteins I: Structures and oxygenation equilibria.
- M 10.20 (C) Haemoproteins II: Co-operative oxygen binding to haemoglobin, binding of CO₂ and H⁺. Allosteric effects. Binding of CO.
- M 10.21 (C) Haemoproteins III: Molecular diseases and mutant haemoglobins.
- M 10.22 (C) The importance of pH in biological fluids.
- M 10.23 (C) Acid/base balance in the body.
- M 10.24 (C) Buffer systems of the body. Acid/base disturbances in the body (respiratory and metabolic acidosis and alkalosis).
- M 10.25 (C) Buffer systems and the Henderson-Hasselbalch equation. Buffer capacity.
- M 10.26 (C) Amino acids/proteins as important buffers.

7 x 1 hour tutorials

Module 11 (9 x 3-hour practicals)

Biomedical Laboratory Sciences

- M 11.1 Epithelial Tissue
- M 11.2 Nervous Tissue & Excretory System
- M 11.3 Cardiovascular System and Blood Buffer System
- M 11.4 ECG and Blood Pressure
- M 11.5 Reproductive & Respiratory System
- M 11.6 Osmosis and Dialysis

- M 11.7 Refraction and Reflection of light Physics of the eye
 M 11.8 Measurement of the Wavelength of Sound using the Resonance Tube. Measurement of Peak Flow and Tidal Volume
 M 11.9 Investigation of the kinetics of the hydrolysis of lactose.

Module 12: Professionalism in the Health Sciences II [5 credits]

Part A: Core Lectures (All Students):

- M12.1 Introduction to Professionalism in Healthcare sciences II
 M12.2 An introduction to culture and its effects on communication
 M12.3 Intercultural communication in a healthcare sciences context
 M12.4 Professional communication – Part 1
 M12.5 Reflective Practice – Part 2
 M12.6 Group work & communication in a Healthcare setting
 M12.7 Ethics – an introduction to basic ethical case analysis
 M12.8 Library/Research skills – Online catalogue, navigation tools & skills
 M12.9 Professional Communication – Part 2
 M12.10 Professional Communication – Part 3

Part B (i): Electives: (Non-language programme students):

Elective options vary year-on-year and full descriptions of each elective option are presented to students at the start of semester 2. Students are then given time to select which elective option they wish to take. An average of 7 elective options are open to students each year, ranging from research-based electives, to working in the community, fund-raising initiatives and humanities-based electives. The aim is to broaden the student experience while consolidating the skills and competencies associated with group work, communications skills and professionals skills and attitudes, to name a few. Students are given clear guidelines on what is required to complete their chosen elective. There is a uniform agreed marks and standards outline for the elective component regardless of the elective topic chosen which is outlined in the Marks and Standards. Contact time and the nature of the elective are determined entirely by the nature of the topic chosen and are published on Moodle.

Part B (ii): Inter-Professional Education Stream (Non-language programme students):

<p>Part B: (ii) Inter-Professional Education Stream for all students not attending the Language programme Inter-Professional Education (equivalent to 30 hours of course work = 5 case-based tutorials approx)</p>
<p>The aim of this stream is to build on knowledge, skills and attitudes acquired in semester I (module 6) in a spiral curricular fashion. Specifically, students will complete 5 case-based tutorials in which they will explore common and collaborative competencies. The drug aspirin has been chosen as an integrating strand to provide context. Case-based tutorials on asthma, gastrointestinal, pain, cardiovascular and chronic obstructive pulmonary disease (COPD) have been selected to facilitate a broad base from which to draw from.</p> <p>On completion of this stream, students will</p> <ul style="list-style-type: none"> ▪ be able to identify their own and other professions' expertise, background, knowledge and values (collaborative competency). ▪ demonstrate the ability to find, critically evaluate, manage and synthesise new information with existing information to create new understanding (common competency). ▪ be able to demonstrate problem solving skills and knowledge integration (common competency). ▪ respect and understand the roles of other healthcare professionals (collaborative competency).

Part C: Language Programme Stream (Language Programme Students Only)

a. Medical Terminology

- Familiarise with the terminology used in lectures
- Study specific lecture content in terms of vocabulary
- Improve understanding of the lecture content
- Provide academic support for the medical input

b. Paragraph Function (Defining)

- Understand the basics of writing a defining paragraph
- Organise information in a paragraph
- Use specific language
- Write a defining paragraph

c. Paragraph Function (Classification)

- Understand the basics of writing a classification paragraph
- Organise information in a paragraph
- Use specific language
- Write a classification paragraph

d. Paragraph Function (Description)

- Understand the basics of writing a description paragraph
- Organise information in a paragraph
- Use specific language
- Write a description paragraph

e. Compare and Contrast

- Use comparative information from charts
- Use different structures for comparative sentences
- Use textual comparative information
- Write a comparative paragraph

f. Process Description

- Describe a cyclical/ linear process
- Use language for sequencing a process
- Utilise diagrammatical information
- Recognise active and passive structure

g. Interpreting Visual Information

- Obtain basic information from charts tables and graphs
- Recognise the basic trends in charts tables and graphs
- Use suitable vocabulary for describing information
- Use suitable descriptive structures

Appendix 4: Sample of Student and Staff Interviews

Student 2 (Recording 5)

Bahraini nationality, 3 interview, government secondary school in Bahrain, 95.2 GPA, IELTS 6, Failed FY M7, M1. Repeat student

- Interviewer Thank you so much, thank you for coming along today. So as I've told you before the information is going to be anonymous and will have no negative impact whatsoever and I'm just going to ask you some questions about your experiences on the FY, ok?
- Student 2 Great
- Interviewer So how do you feel about your FY experiences?
- Student 2 Well, I'm a repeat student so I think this time is better because last year I was new to the whole experience so, it's kind of different the experience in our university so I didn't get used to it straight away so this year it's much better.
- Interviewer So, going back to last year. What were your experiences when you first joined FY?
- Student 2 I don't know, it's just like everything is new and I come from a government school so it's like every aspect is different. In school it's only girls, everything is in Arabic, and the amount of things we have to study here, we have to keep up. It's like I was in shock a little bit. They have a strict system here so it was like a bit difficult.
- Interviewer How long did the shock last for?
- Student 2 In semester 1 I was out of the university, I wasn't focused, I wasn't thinking straight. I was expecting everything to be easy because of what I had before, I was an A student, everything was just fine, I didn't have to study actually. When I came here I was like, it's going to be the same. Then in Semester 2 I have some difficulties, some circumstances that...yeah so about the whole of the semester
- Interviewer When did you realise that you were in trouble?
- Student 2 When I got the results for the first semester..
- Interviewer Ok, so how did your experiences at school prepare you for FY?
- Student 2 Not much. We had our classes and for me I would pay attention during class and then I don't have to study again. That's how my brain functions when I was at school. But here it's like you don't get the full information during the lecture. You have to research, you have to read again, you have to do it all again, like before and after the lecture, so I didn't do that last year so it was hard. But at the same time I listened to the lecturers and thought I don't have to go through the lectures again, I don't have to do all of the things that they say I have to do. I was an 'A' student and I didn't have to study, so that's like how my brain was working. That's all I was thinking about. It wasn't like school, it was very, very different for me.
- Interviewer And this year you are studying in a different way?
- Student 2 Yeah totally different
- Interviewer How are you studying this year?
- Student 2 First like, I have to read the lectures before attending them, then after the lecturers I have to go through them again. I don't have to memorise them 100% but I have to understand them and then a month before the finals I have to go through them again, so the night before the final, I have the information but I just have to skim through it again.
- Interviewer Did anyone tell you that that's what you needed to do when you first joined?
- Student 2 Yeah, but I didn't
- Interviewer OK. Has your level of English impacted on your studies?

Student 2 Yeah definitely, I am good with English, I'm fine but when it comes to the medical terms and all that, we didn't take that kind of English at school, it was just basic. Something that would get you through the day actually. Like when you are dealing with an English person it's not like that good. For me from a Government school my English is way better than other kids from a Government School, but I have to translate things and I have to go through them to make sure I understand what this is because. The information that we are taking here, we took in school but it was in Arabic so we have to translate

Interviewer And are you still translating?

Student 2 No, no I'm better now, I do it for the words I've never heard before, especially for the medical things, when you have a word that I have never heard it, not school not anywhere. I have to translate it to know what it is, to memorise it, to keep it in my brain.

Interviewer Do you think that was a problem last year? Translation?

Student 2 Mmm translations not a big problem, because you kind of get the information when you are reading it, but the term this is the one you need to memorise, there isn't a problem, most of the students did the translation and it was fine. It doesn't take that much long.

Interviewer Ok what IELTS score did you come in with?

Student 2 IELTS 6

Interviewer How important is it for you to become a doctor?

Student 2 When I failed last year, I left actually, I was going to a different university to study something completely different, Mechanical Engineering that was my second option after medicine but I went there to the university, I was there for two weeks but I wasn't, I didn't feel that this was my place. I came back here and it was a relief to come back here. I enjoyed it, the amount of studies is too much but when you kind of take it slow you kind of enjoy it, so I love medicine.

Interviewer OK, can you tell me about your academic achievements in FY last year?

Student 2 Like a lot of the students barely passing some of the modules. I wasn't studying but this year it is much better.

Interviewer You are doing much better academically?

Student 2 Yeah

Interviewer How do you feel about your summative examination results from semester 1 this year?

Student 2 Well the first one, I didn't do well, I have just got back to the university and ...so I didn't get a good grade but after that it was ok. I wasn't used to the questions because of like, for example Dr F's questions you have to choose the most correct or the most wrong...and so I wasn't like.. but when I got used to them I was getting better grades.

Interviewer How could you improve your academic achievement?

Student 2 Studying more, researching...

Interviewer Which areas of the FY curriculum do you find the most challenging? Which are your most difficult modules?

Student 2 It's not the whole module it's like some specific systems like the Endocrine system, I didn't enjoy it, like there's too many hormones that you have to memorise. I go for the understanding more than memorising but it's more like memorising.

Interviewer That's a Human Systems module isn't it?

Student 2 Yeah, the Endocrine

Interviewer Which module is it?

Student 2 Module 5

Interviewer Could you tell me about the levels of support you experienced from academics, peers which is your friends and the Support Centre?

Student 2 In my group like the repeat students got to know each other more, we are very much helping each other, that's what I didn't have last year, but this year we are asking each other, someone didn't understand so someone would come and explain it to them so we are pretty good together and Mr P at

Interviewer Do you have a study group with the repeat students?

Student 2 And other students..

Interviewer What about academics are you getting any support?

Student 2 Yes , well I don't really go to them but this year they are being more helpful with the students.

Interviewer Could you tell me about making friends at RCSI, so if you think about back to last year when you first joined. Friends at the beginning?

Student 2 Yeah kind of but they weren't like really good, I had friends now we are no longer friends, I have new friends, like I have friends from last year definitely

Interviewer What kind of things could have improved your experience of learning in FY?

Student 2 For last year?

Interviewer Yeah and in general

Interviewer Understanding what it is about , what medicine is about. It's more about focusing on medicine, on studying and that. It's ok to have outside activities but mostly you have to focus on studying and stuff, realising that would have been better sooner but it's good enough.

Interviewer Tell me how you feel about being part of RCSI?

Student 2 I can say I'm proud, I've seen other universities but here it's kind of your home. RCSI is a place where you don't feel uncomfortable, you are like living your life, other universities are more strict about coming, not attendance .. they are more strict , more uncomfortable but here we are more comfortable

Interviewer How much time do you spend on studying

Student 2 Every day? I can say 2-3 hours, other than attending here, I go and study 2-3 hours, sometimes if the lectures are long and need more, it takes more time but if the lectures are easy and fast I can take 2-3 hours

Interviewer And last year?

Student 2 I barely studied for the finals

Interviewer And attendance, what's your attendance like?

Student 2 Fine, I can say fine, sometimes I prefer not attending and self study because I have this thing like I can't focus the whole lecture. It's like I lose the focus and get distracted easily.

Interviewer What would help you focus more do you think?

Student 2 I don't know, I try and focus but sometimes for example when I attend Dr F, he has his accent a bit, and some mistakes with his English, I'm not perfect with my English but things like that distract me, my brain starts correcting words, and for example Dr S repeats for students , it's good that when someone does not understand the lecture he is saying, he explains it but for me if you repeat it and I understand it once, my brain not focussing, getting distracted all that stuff. It's fine though...

Interviewer What about tutorials?

Student 2 I do not attend tutorials, I go for the Drs, like Dr D and Dr S but when the lab assistants, I don't attend

Interviewer OK

Student 2 I know that I benefit much from these tutorials with the Drs it's like they are 100% sure of the information they are saying , the are always explaining it .The lab

assistants they are mostly not passionate about the explanation, so i prefer... during the lectures I get it myself

Interviewer What do you think about continuous assessment? In the tutorials where you have the continuous assessments, does that help you?

Student 2 We had the continuous assessments last year, this year there are no continuous assessments just the formatives

Interviewer How does that compare?

Student 2 No the formatives are much better , for the continuous assessments you didn't study so much for the tutorial but now it's kind of similar to the final study . We do the lectures before and the night of the formative we do them again, the information stays in our brains.

Interviewer The design of the FY this year is a little bit different

Student 2 Yeah

Interviewer What do you think about that?

Student 2 I think that it's better but I'm not sure about the double module things, I don't know we are not over the FY so I can say that there are better results but overall I think it's better, this way is better it is giving us more time to study the lectures, more time to understand them and if we need help we can get help more .

Interviewer Can you tell me anything else about FY and RCSI?

Student 2 This year it's much better, it's good for the students.
That's great, thank you very much
You're welcome

Staff C

Staff C How do you feel about the student experience on the FY?

Interviewer I think it's good. I spoke to students who had moved up to JC and IC who had done FY , they all emphasised that it was a tremendous use to them, some things they did , they didn't come across again. For a lot of them, very useful, but that's just in general. Subject wise a suppose a little different.

Staff C Let's go onto the subject areas, you have two subject areas Physics and Chemistry

Interviewer So which do they find most challenging?

Staff C Chemistry, interesting, the difference between the two is that the Physics is very focused on medicine and the principles of physics very much apply to medicine, so much so that I am able to take the students in the second semester over to the hospital and they are able to see what they got lectures on in the first semester. It's very practical and hands on. The guys in Dublin who put the course together did a very good job , the vast majority of the physics course is applied to medicine. Because of this you will probably find a high pass rate in Physics compared with Chemistry. One of the problems they experience in both subjects is numeracy, this is lacking amongst some of our students. The need for it in Physics is there but they can get over it a lot better in Physics than in Chemistry, and of course it is very important to have medics who are numerate. I find the teaching of mathematics is a real problem. If you were to search back for the difficulties that people have in science then it would go back to mathematics. That's on eof the aspects, there are other aspects as well, but the main one is numeracy.

Interviewer Is that more noticeable in students who come from particular secondary school experiences?

Staff C Yeah, some secondary schools because I am associated with admissions, I can see some of the problems these students are going to experience.

Interviewer That's not necessarily the Arabic schools

Staff C No it isn't and you find the same in Ireland as well that the numeracy is a real problem when you come to the sciences. Very interesting that in some universities they just look at your level of maths to go into a science course

Interviewer And do we do that here?

Staff C It's required that they have a least a standard level of maths but you wouldn't be expecting honours maths or anything like that

Interviewer By standard you mean to year 10?

Staff C Definitely year 10 or above. Quite often you can see the correlation of how they perform in maths and how they perform in the sciences, very similar

Interviewer Would you like to see higher entrance criteria for maths?

Staff C Not necessarily, as long as they have a good standard, that they are numerate, that they can do calculations. A lot of the problems in corrections are numeracy, but you see understanding it ...I'll go back to you man Kelvin, if you can't put figures on it then you know nothing..serious. You can divide the sciences into 3, take Biology a lot more descriptive work, then Physics and Chemistry numeracy, really if they don't understand the concepts in those two, and the difficult parts in Chemistry, it's numeracy that's causing it

Interviewer Talking about the Physics curriculum being far better matched to medicine, do you think that this impacts on the levels of engagement of the students?

Staff C Yes, it does. They see a reason for it, they see where it is going to be used, like all the imaging techniques, but they are nicely packaged as well, like MRI, it's pure imaging, there are other applications but we don't look at those, ultrasound the same, x-rays and then the more difficult ones, tomography, CT scans and PET CT, they see the application straight away and it's focused on that, very focused, all aspects of it. I think the physicists went out of their way to only include things, Chemistry is a little bit different, you have to give the basics first and then show the applications. With physics you can zone in on and see how it's applied and the concepts are simple.

Interviewer Chemistry has a number of problems, you are dealing with atoms and molecules that you don't see and you have to visualise them, some students don't have the ability to visualise them and to be able to see a pattern in three dimensions. Dealing with something that you are never going to see, you deal with the effects of it alright but don't see it. To be conversant and put atoms together to get molecules. Not that you go into details but when you go into 3 dimensions this is when they can start to lose contact with the subject. You only get a certain percent of people who are able to do this kind of thing. They won't understand molecular Biology, Physiology without it. The real stumbling block is the Mole Concept, the number of people who even have a degree and don't understand this concept. It is so simple and permeates through the whole subject, still you can get on without it but no understand your subject properly, so getting that across to students is a real challenge and the calculations within that, that's where the numeracy comes in. This happens early on and you do try and make it applicable to medicine, in blood analysis and so on and looking at the electrolyte concentrations, unfortunately electrolyte concentrations are given in different units and so they have to be conversant with converting these, and again that's where your numeracy comes in, so you can see a weak student can get lost in a maze of detail.

Staff C Do you find a difference in the level of engagement of the students when you teach a physics lecture and when you teach a Chemistry lecture? During the

lecture I wouldn't, but it's after when they come to you with problems, you see where the difficulties are and where the basics that they haven't got it Generally I think students do have a greater difficulty with Chemistry rather than Physics. Funny enough when I was doing science it was the other way round. To modern students it's Chemistry which is the real difficulty, I can see where it is coming from, you need to be competent with figures and competent with your maths, then visualising. Then the application and problem solving and that's the real place where they learn, when they can problem solve, it makes sense then, up until that it might not make sense, until students are in JC. Students cannot have an idea of PH and they carry this with them and gloss over it, they haven't got the maths at the time when it was delivered, another thing is memorisation is emphasised and that's the last thing that should be emphasised, they can remember things from constantly doing them but I don't emphasis memorisation even in organic chemistry, it's the lowest form of learning

Interviewer But the way that subjects are taught through lectures, this encourages memorisation?

Staff C It depends on the way the student approaches it, if your lecture is packed it will be difficult for them to understand all the aspects and some just memorise and that's wrong. Understanding firsts. Maybe we should reduce the number of concepts delivered

Interviewer How do you feel about the ways in which students are examined in your subject areas?

Staff C Some good ways, there is over assessment, 6 modules in each semester and there is an exam in each module. In my day I had about 15 hours for the whole year. There is over assessment and sometimes too detailed. In FY it is broad issues and not details. Some exam questions I don't know what the examiner is looking for. The exam question should measure competency and grade this competency and not test memorisation.

Interviewer What are your thoughts on continuous and formative assessment?

Staff C It's good particularly during the first semester with the big step from second to third level. The intensity of assessment is very demanding on them.

Interviewer Would you say that a student coming from an IB or A0level background is better prepared?

Staff C Yes although the bright Tawjiheya students do better

Interviewer What factors influence students' success and failure on FY?

Staff C They have a programme of learning and a programme of revision. They learn and then leave their revision until the last fortnight and that's a waste of time because what they have done at the beginning of the semester they have forgotten by the end, they have to relearn it and they think that's revision. They have to build two calendars, one for study and one for revision, revision gets less as it goes along because of the way you learn, revising a concept you lose less when you revise on a two week period. They have no idea, I tell them but with many it goes right over their heads.

Interviewer Is there anything we can do as a university to stop it going right over their heads?

Staff C It's to do with a concentrated method of learning and revision. It's interesting to see them when they come to revision and that's the value of the formatives, that they do some revision but it should be more concerted and continuous

Interviewer How does the students' prior learning experience influence learning on the FY?

Staff C A good foundation is definitely important in those two subjects. When they have a solid foundation they hear the same concepts in a different context. Definitely the

calibre of their second level is important. This can explain why Tawjiya students do very well. They have a science stream . With IB ,A-levels they can get away with two sciences , it's difficult to get all 3 sciences in A-levels, but in the Tawjiya the concentrate on the sciences, they might not reach the same level but the good students do very well

Interviewer
Staff C How does student language ability impact on learning in Physics and Chemistry?
Very much so. The real difficulty here is when they have learnt the subject in Arabic and they have to re-learn in English or they are translating it. They translate and try to link it up, you see them doing that. You are using a language to deliver the concepts and if they know the concepts in another language they are going to translate-they will hear the concepts in the language they know and they will lose part of the information. Science and medicine is based in Latin and Greek the European languages are a help to understanding the concepts, if they do have a good basis they can see the language connection with the concept , here they don't, there is no connection, it's a disadvantage. Then they hear about Bould's Law and who was Bould? And they are all European guys in the science text book and maybe they feel a bit disconnected from it

Interviewer Do you think there are any issues with such a culturally diverse group in this transnational setting?

Staff C I don't think so, I just think the Arabic students would be at a disadvantage because of the language

Interviewer How could students improve their academic performance?

Staff C I come back to their learning and a timetable and not procrastinating and not leaving it, when they get their lecture, learning it and understanding it and applying it and sometime later, 2-3 weeks revising it, both together

Interviewer Do you think if we offered students this as led sessions it would be effective?

Staff C Yes it would . Interesting to talk to them on how much time they spend learning a lecture, I think it is about 2 hours per lecture. Those two hours in 2-3 weeks time would only take ½ hour , then the following 3 weeks, ¼ hour, the revision time gets less.

Interviewer Can you tell me about the levels of support offered to students?

Staff C I've never come across a place where the students get so much support, never, and I'm at it a long time. I've taught in universities, teacher training college, primary, secondary schools, they are nearly on a par with the attention you give to students in a primary school the difference is that it is left to themselves to go and get it and the lazy ones don't take it . This developed because we are new and started with 28 students when you couldn't help run into students and so the concept of the staff being constantly available is still there 10 years later. This will gradually lessen as numbers continue to grow and older staff are replaced, but there is an open door policy there, you seldom come across anywhere else. The availability of staff to students is exceptional and the support, all the lecture notes are done for them on the VLE, they don't have to write a note which is bad. I think electronic delivery is too available to them, it doesn't encourage engagement. I have taught a lecture in a tutorial using a whiteboard not power points and students came to me and said 'That's fantastic', they can understand the story behind it built it up, if you deliver properly that's how you do it. It's like giving someone a big dinner and slapping it down in front of them when you do a power point presentation. If you deliver it piecemeal and have to build it up yourself you teach the core information. In the old style teaching you would build up a diagram and I try and replicate this in power point but it hasn't the same impact, so I don't agree with electronic delivery, it is a help but it dominates. It comes down to

the way you deliver it. They have available many powerpoints on the web also if they have a difficulty in understanding they can access hundreds and they get overwhelmed, also they may not be selected. They can see things in 3 dimensions on the web but can they present it themselves?

Interviewer
Staff C

How could we improve the student experience of learning in FY?

I don't know, the thing is getting them engaged some don't, the good ones do but you can bring a horse to water but you can't make him drink. How do you make some of them enthusiastic about it? You can see their faces light up when the concept dawns on them, but that is an engaged student who can sit and listen to you, but some don't

Interviewer

Do you think some get overwhelmed and by the time they realise it is too late. That's it, it's like an avalanche has fallen on them. In second level they have to turn up with homework, here there is no one who will ask for homework, if they have revised their lecture, and if you do they all tell you they have, so it's getting across that they aren't kids anymore and they have responsibility for their own learning, this has to be inculcated in them early –you are responsible for this. I remember the President for RCSI the day we opened in Seef and he referred to the 28 students as Colleagues in Learning, thankfully a lot of those 28 were colleagues in learning, you see there are some here who aren't colleagues in learning, they are not engaged and it's sad. That can come down to that in the first week they have lost contact, down to difficulty in numeracy, in language, in basic concepts and they are lost. It's like climbing a ladder, if the bottom rungs are missing it's hard to climb

Staff C

Can you tell me anything else that we haven't talked about

Interviewer

One of the best student experiences is 12 students I took to the hospital and they worked with the Radiographer and these concepts were linked to their lectures, they saw the MRI being taken, then the image, saw the application, that was fantastic for them, but this was only possible for a small number. That's why the Physics course is much further ahead of the Chemistry one. The Chemistry could be revamped just for medicine at the moment it is linked to Pharmacy in Dublin, medicinal Chemistry

Appendix 5: Age of Foundation Year Students 2010-2013 against Foundation Year Pass and Failure Rates

Age

N	Valid	308
	Missing	0

Statistics

Age

N	Valid	308
	Missing	0
Mean		18.47

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
17	34	11.0	11.0	11.0
18	179	58.1	58.1	69.2
19	62	20.1	20.1	89.3
20	19	6.2	6.2	95.5
21	5	1.6	1.6	97.1
22	1	.3	.3	97.4
23	4	1.3	1.3	98.7
25	1	.3	.3	99.0
26	1	.3	.3	99.4
28	1	.3	.3	99.7
32	1	.3	.3	100.0
Total	308	100.0	100.0	

Age * Grade FY Crosstabulation

		Grade FY		Total	
		Fail	Pass		
Age	17	Count	8	26	34
		% within Age	23.5%	76.5%	100.0%
	18	Count	32	147	179
		% within Age	17.9%	82.1%	100.0%
	19	Count	11	51	62
		% within Age	17.7%	82.3%	100.0%
	20	Count	6	13	19
		% within Age	31.6%	68.4%	100.0%
	21	Count	1	4	5
		% within Age	20.0%	80.0%	100.0%
	22	Count	0	1	1
		% within Age	0.0%	100.0%	100.0%
	23	Count	3	1	4
		% within Age	75.0%	25.0%	100.0%
	25	Count	0	1	1
		% within Age	0.0%	100.0%	100.0%
	26	Count	1	0	1
		% within Age	100.0%	0.0%	100.0%
	28	Count	1	0	1
		% within Age	100.0%	0.0%	100.0%
32	Count	1	0	1	
	% within Age	100.0%	0.0%	100.0%	
Total	Count	64	244	308	
	% within Age	20.8%	79.2%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.873 ^a	10	.016
Likelihood Ratio	18.430	10	.048
Linear-by-Linear Association	11.043	1	.001
N of Valid Cases	308		

Appendix 6: Student Secondary School Curriculum Type against Foundation Year Pass and Failure Rates

School type		
N	Valid	291
	Missing	17
Mean		1.35
Median		1.00

School type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Private	188	61.0	64.6	64.6
	Government	103	33.4	35.4	100.0
	Total	291	94.5	100.0	
Missing	System	17	5.5		
Total		308	100.0		

School type * Grade FY Crosstabulation					
			Grade FY		Total
			Fail	Pass	
School type	Private	Count	38	150	188
		% within School type	20.2%	79.8%	100.0%
	Government	Count	21	82	103
		% within School type	20.4%	79.6%	100.0%
Total	Count	59	232	291	
	% within School type	20.3%	79.7%	100.0%	

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001 ^a	1	.972		
Continuity Correction ^b	.000	1	1.000		
Likelihood Ratio	.001	1	.972		
Fisher's Exact Test				1.000	.543
Linear-by-Linear Association	.001	1	.972		
N of Valid Cases	291				

Appendix 7: Student Nationality against Foundation Year Pass and Failure Rates

Statistics

Nationality

N	Valid	308
	Missing	0

Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Arab	218	70.8	70.8	70.8
	Western	58	18.8	18.8	89.6
	Asian,African,Others	32	10.4	10.4	100.0
	Total	308	100.0	100.0	

Nationality * Grade FY Crosstabulation

Count

		Grade FY		Total
		Fail	Pass	
Nationality	Arab	46	172	218
	Western	11	47	58
	Asian,African,Others	7	25	32
Total		64	244	308

Nationality * Grade FY Crosstabulation

		Grade FY		Total	
		Fail	Pass		
Nationality	Arab	Count	46	172	218
		% within Nationality	21.1%	78.9%	100.0%
		% within Grade FY	71.9%	70.5%	70.8%
		% of Total	14.9%	55.8%	70.8%
	Western	Count	11	47	58
		% within Nationality	19.0%	81.0%	100.0%
		% within Grade FY	17.2%	19.3%	18.8%
		% of Total	3.6%	15.3%	18.8%
	Asian,African,Others	Count	7	25	32
		% within Nationality	21.9%	78.1%	100.0%
		% within Grade FY	10.9%	10.2%	10.4%
		% of Total	2.3%	8.1%	10.4%
Total	Count	64	244	308	
	% within Nationality	20.8%	79.2%	100.0%	
	% within Grade FY	100.0%	100.0%	100.0%	
	% of Total	20.8%	79.2%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.405 ^a	2	.817
Likelihood Ratio	.417	2	.812
Linear-by-Linear Association	.037	1	.848
N of Valid Cases	306		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.59.

Appendix 8: Student Gender against Foundation Year Pass and Failure Rates

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Grade FY	Male	122	1.84	.372	.034
	Female	186	1.76	.426	.031

Group Statistics T-test Module # Gender

N	Mean	Std. Deviation	Std. Error Mean
122	60.7049	19.00095	1.72027
186	55.4946	21.11724	1.54839
122	57.6721	18.89398	1.71058
186	54.6720	22.52050	1.65128
122	61.3443	16.92510	1.53233
186	59.9608	19.03570	1.39577
122	67.7377	18.77567	1.69987
186	64.5161	22.21619	1.62897
122	57.5574	21.83902	1.97721
186	52.2403	23.14739	1.69725
122	64.6311	19.64108	1.77822
186	60.9032	22.54896	1.65337
122	58.1885	21.31167	1.92947
186	54.5645	22.83025	1.67399
122	59.7049	22.66744	2.05221
186	55.9301	23.22535	1.70297

Gender * Grade FY Crosstabulation

			Grade FY		Total
			Fail	Pass	
Gender	Male	Count	20	102	122
		% within Gender	16.4%	83.6%	100.0%
Gender	Female	Count	44	142	186
		% within Gender	23.7%	76.3%	100.0%
Total		Count	64	244	308
		% within Gender	20.8%	79.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.361 ^a	1	.124		
Continuity Correction ^b	1.940	1	.164		
Likelihood Ratio	2.415	1	.120		
Fisher's Exact Test				.151	.081
Linear-by-Linear Association	2.353	1	.125		
N of Valid Cases	308				

Group Statistics T-test Module # Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Module1	Male	122	60.7049	19.00095	1.72027
	Female	186	55.4946	21.11724	1.54839
Module2	Male	122	57.6721	18.89398	1.71058
	Female	186	54.6720	22.52050	1.65128
Module3	Male	122	61.3443	16.92510	1.53233
	Female	186	59.9608	19.03570	1.39577
Module10	Male	122	59.7049	22.66744	2.05221
	Female	186	55.9301	23.22535	1.70297

Appendix 9: Student Secondary School Certificate Type against Foundation Year Pass and Failure Rates

Secondary School Certificate

N	Valid	292
	Missing	16

Secondary School Certificate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Arabic Tawjiya Certificate	97	31.5	33.2	33.2
	American High School Diploma	69	22.4	23.6	56.8
	A level	44	14.3	15.1	71.9
	IB	49	15.9	16.8	88.7
	Advance Placement	3	1.0	1.0	89.7
	Indian CBSE	5	1.6	1.7	91.4
	Other	25	8.1	8.6	100.0
	Total	292	94.8	100.0	
Missing	System	16	5.2		
Total		308	100.0		

Secondary School Certificate v Grade FY Cross tabulation

			Grade FY		Total
			Fail	Pass	
Arabic Tawjiya	Count		21	76	97
	% within SS Certificate		21.6%	78.4%	100.0%
American High School Diploma	Count		24	45	69
	% within SS Certificate		34.8%	65.2%	100.0%
A level	Count		3	41	44
	% within SS Certificate		6.8%	93.2%	100.0%
SS Certificate IB	Count		8	41	49
	% within SS Certificate		16.3%	83.7%	100.0%
Advance placement	Count		0	3	3
	% within SS Certificate		0.0%	100.0%	100.0%
Indian CBSE	Count		2	3	5
	% within SS Certificate		40.0%	60.0%	100.0%
Combination	Count		3	22	25
	% within SS Certificate		12.0%	88.0%	100.0%
Total	Count		61	231	292
	% within SS Certificate		20.9%	79.1%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.074a	6	.009
Likelihood Ratio	18.193	6	.006
Linear-by-Linear Association	2.734	1	.098
N of Valid Cases	292		

Appendix 10: Student Secondary School Grade Percent Average against Foundation Year Pass and Failure Rates

GPA Secondary School

N	Valid	273
	Missing	35
Mean		1.4615
Median		1.0000

GPA Secondary School

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	157	51.0	57.5
	Medium	106	34.4	96.3
	High	10	3.2	100.0
	Total	273	88.6	100.0
Missing	System	35	11.4	
Total		308	100.0	

GPA Secondary School * Grade FY Cross tabulation

			Grade FY		Total
			Fail	Pass	
GPA Secondary School	Low	Count	42	115	157
		% within GPA Secondary School	26.8%	73.2%	100.0%
	Medium	Count	10	96	106
		% within GPA Secondary School	9.4%	90.6%	100.0%
	High	Count	5	5	10
		% within GPA Secondary School	50.0%	50.0%	100.0%
Total	Count	57	216	273	
	% within GPA Secondary School	20.9%	79.1%	100.0%	

Appendix 11: Student Interview Scores against Foundation Year Pass and Failure Rates

Interview score		
N	Valid	263
	Missing	45
Mean		2.44
Median		2.00

Interview score					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1Low	5	1.6	1.9	1.9
	2	136	44.2	51.7	53.6
	3High	122	39.6	46.4	100.0
	Total	263	85.4	100.0	
Missing	System	45	14.6		
Total		308	100.0		

Interview score * Grade FY Crosstabulation					
			Grade FY		Total
			Fail	Pass	
Interview score	low	Count	1	4	5
		% within Interview score	20.0%	80.0%	100.0%
	medium	Count	33	103	136
		% within Interview score	24.3%	75.7%	100.0%
	high	Count	19	103	122
		% within Interview score	15.6%	84.4%	100.0%
Total	Count	53	210	263	
	% within Interview score	20.2%	79.8%	100.0%	

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.019 ^a	2	.221
Likelihood Ratio	3.056	2	.217
Linear-by-Linear Association	2.570	1	.109
N of Valid Cases	263		

**Appendix 12: Student English Level against Overall and Modules 1, 2, 3 and 10
Foundation Year Pass and Failure Rates**

English level		
N	Valid	270
	Missing	38
Mean		2.54
Median		3.00

English level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< IELTS 6	52	16.9	19.3	19.3
	IELTS 6 - 6.5	143	46.4	53.0	72.2
	IELTS 7+	75	24.4	27.8	100.0
	Total	270	87.7	100.0	
Missing	System	38	12.3		
Total		308	100.0		

English level * Grade FY Crosstabulation					
			Grade FY		Total
			Fail	Pass	
	< IELTS 6	Count	16	36	52
		% within English level	30.8%	69.2%	100.0%
English level	IELTS 6 - 6.5	Count	28	115	143
		% within English level	19.6%	80.4%	100.0%
	IELTS 7+	Count	11	64	75
		% within English level	14.7%	85.3%	100.0%
Total		Count	55	215	270
		% within English level	20.4%	79.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.026 ^a	2	.081
Likelihood Ratio	4.806	2	.090
Linear-by-Linear Association	4.608	1	.032
N of Valid Cases	270		

English Level Module 1

Crosstab

			Module1_G		Total
			Fail	Pass	
< IELTS 6	Count		13	39	52
	% within English level		25.0%	75.0%	100.0%
English level IELTS 6 - 6.5	Count		19	124	143
	% within English level		13.3%	86.7%	100.0%
IELTS 7+	Count		6	69	75
	% within English level		8.0%	92.0%	100.0%
Total	Count		38	232	270
	% within English level		14.1%	85.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.494 ^a	2	.024
Likelihood Ratio	7.052	2	.029
Linear-by-Linear Association	6.905	1	.009
N of Valid Cases	270		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.32.

English Level Module 2

Crosstab

		Module2_G		Total	
		Fail	Pass		
English level	< IELTS 6	Count	11	41	52
		% within English level	21.2%	78.8%	100.0%
	IELTS 6 - 6.5	Count	22	121	143
		% within English level	15.4%	84.6%	100.0%
	IELTS 7+	Count	7	68	75
		% within English level	9.3%	90.7%	100.0%
Total	Count	40	230	270	
	% within English level	14.8%	85.2%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.478 ^a	2	.176
Likelihood Ratio	3.544	2	.170
Linear-by-Linear Association	3.464	1	.063
N of Valid Cases	270		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.70.

English Level Module 3

Crosstab

			Module3_G		Total
			Fail	Pass	
English level	< IELTS 6	Count	10	42	52
		% within English level	19.2%	80.8%	100.0%
	IELTS 6 - 6.5	Count	11	132	143
		% within English level	7.7%	92.3%	100.0%
	IELTS 7+	Count	4	71	75
		% within English level	5.3%	94.7%	100.0%
Total	Count	25	245	270	
	% within English level	9.3%	90.7%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.836 ^a	2	.147
Likelihood Ratio	3.748	2	.154
Linear-by-Linear Association	3.723	1	.054
N of Valid Cases	270		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.04.

English Level Module 10

Crosstab

		Module10_G		Total	
		Fail	Pass		
English level	< IELTS 6	Count	13	39	52
		% within English level	25.0%	75.0%	100.0%
	IELTS 6 - 6.5	Count	26	117	143
		% within English level	18.2%	81.8%	100.0%
	IELTS 7+	Count	8	67	75
		% within English level	10.7%	89.3%	100.0%
Total	Count	47	223	270	
	% within English level	17.4%	82.6%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.515 ^a	2	.105
Likelihood Ratio	4.625	2	.099
Linear-by-Linear Association	4.493	1	.034
N of Valid Cases	270		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.05.

Appendix 13: Student Secondary School Language Curriculum Type against Foundation Year Pass and Failure Rates

Secondary School Curriculum Type

N	Valid	291
	Missing	17
Mean		1.3368
Median		1.0000

Secondary School Curriculum Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	193	62.7	66.3	66.3
	Arabic	98	31.8	33.7	100.0
	Total	291	94.5	100.0	
Missing	System	17	5.5		
Total		308	100.0		

Secondary School Curriculum Type v Grade FY Cross tabulation

			Grade FY		Total
			Fail	Pass	
Curriculum type SS	English	Count	41	152	193
		% within Curriculum type SS	21.2%	78.8%	100.0%
	Arabic	Count	21	77	98
		% within Curriculum type SS	21.4%	78.6%	100.0%
Total	Count	62	229	291	
	% within Curriculum type SS	21.3%	78.7%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001 ^a	1	.971		
Continuity Correction ^b	.000	1	1.000		
Likelihood Ratio	.001	1	.971		
Fisher's Exact Test				1.000	.542
Linear-by-Linear Association	.001	1	.971		
N of Valid Cases	291				