



**Adoption and Implementation of Online Learning
Systems in Lebanon: Prospects and Barriers**

تكييف وإدخال أنظمة التعليم بواسطة الشبكة في لبنان: التوقعات والعوائق

by

NESSRIN MOHAMMAD SHAYA

**A thesis submitted in fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY IN EDUCATION
at
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August 2018



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ABSTRACT

This study aims at obtaining a finer-grained understanding of the primary prospects and barriers to adopt and implement online education systems in Lebanon, through investigating online learning readiness and acceptance among various key stakeholders in higher education. This study started with an assumption that traditional systems govern the processes of the Ministry of Education and Higher Education, depriving the nation from the chance to harness the opportunities brought forth by online education. A multiple case study, mixed-methods research design, was conducted on Lebanese higher education students, faculty and senior academic leaders, revealed adequate readiness levels and increased acceptance of online education among students and faculty. Data was collected quantitatively through electronically distributed questionnaires and qualitatively through face-to-face semi-structured interviews. Macro and micro levels of analysis took place using statistical testing methods and thematic analysis led to an emergent status of online education in Lebanon. Operationally, strong e-learning management capacity and institutional readiness distinguished private institutions, while weak technological infrastructure and geographical complexity characterized the public university. Lack of readiness in ministry for abrupt change that online education might cause in pedagogy and instruction surfaced, leading to strategical resistance for full-fledged online programs. Diminished state funding for public university, fears from the mediocrity of ‘no-lecture university’, faculty job relevance, doubts in students’ self-regulation skills and the possible influence of corruption

on student enrollment form major barriers. Prospects lie in the consensus that online education can serve as a catalyst for higher education transformative change supported by embracing culture for implementation at postgraduate studies, leading to a proposal on strategic plan for successful implementation. Various statistically tested associations along with sophisticated qualitative stakeholder analysis led to expanding readiness and acceptance models with practical implications for future testing. Limitations were assigned along with valuable and empirical contributions.

نبذة مختصرة

تهدف هذه الدراسة إلى الحصول على فهم دقيق للتوقعات والعوائق الرئيسية التي تتصل بمسألة تكييف وإدخال أنظمة التعليم بواسطة الشبكة (On line learning Systems) في لبنان، وذلك عبر فحص مدى الجاهزية لقبول التعليم بواسطة الشبكة بين الفاعلين الأساسيين في التعليم العالي في لبنان. نبدأ الدراسة بفرضية مفادها أن الأنظمة التقليدية هي التي تحكم عمليات وزارة التربية والتعليم العالي (المشرفة على التعليم العالي الرسمي والخاص) ما يحرم البلاد من اختبار الفرص الكثيرة التي يتيحها التعليم بواسطة الشبكة . وقد أظهرت دراسة متعددة الجوانب للحالة، مع تصميم لبحث متعدد المنهجيات، أجريا على طلبة التعليم العالي في لبنان، كما على أساتذته والمسؤولين الفاعلين فيه، مستويات جاهزية متناسبة، وقبولاً متزايداً للتعليم بواسطة الشبكة بين الطلاب والأساتذة. جرى جمع المعطيات كمياً (Quantitatively) من خلال استمارات أسئلة وزعت بالبريد الإلكتروني، وكيفياً (Qualitatively) في مقابلات مباشرة نصف مصممة مسبقاً (وجهاً لوجه). ثم جرى تحليل ماكرو وميكرو للمعطيات المجمعة باستخدام مناهج التحقق الإحصائي والتحليل الموضوعاتي (thematic)، ما قاد إلى تشكيل صورة واضحة تقريباً (وربما غير مسبوقة) عن وضعية مطلب التعليم بواسطة الشبكة في لبنان. يمكن القول، من وجهة إجرائية على الأقل، أن التعليم العالي الخاص في لبنان يتميز عموماً بقدرة ظاهرة على التعليم بواسطة الشبكة وعلى التعامل الناجح بالتالي مع متطلباته، فيما تعاني الجامعة الرسمية (الجامعة اللبنانية) من بنية تحتية تكنولوجية ضعيفة ومن تورّع جغرافي يشكل عائقاً إضافياً. والأكثر سوءاً أن وزارة التربية الوطنية (الوصية والمسؤولة عن التعليم العالي في لبنان) محكومة كما ظهر بوضوح بنقص في الجاهزية وبمقاومة استراتيجية جلية لأي إدخال متكامل لبرامج التعليم بواسطة الشبكة لأنظمة التعليم في لبنان. تتكون العوائق الرئيسية في هذا المجال من النقص في الموارد التي توفرها الحكومة للجامعة الرسمية (التي تضم أكثر من نصف طلاب التعليم العالي في لبنان)، ومن المخاوف من فكرة وجود جامعة بلا محاضرات، ومن أساتذة تنقص معظمهم الجاهزية والاستعداد الكافي، وكذلك من الشكوك في القدرة على ضبط الطلاب وانتظامهم في النظام الجديد ومن تأثير الفساد المحتمل على حسن انتظام وتدرج الطلاب في النظام المقترح. وبالمقابل تقوم التوقعات الإيجابية في الاجماع على فكرة أن في وسع التعليم بواسطة الشبكة

أن يكون حافزاً لتحول إيجابي مطلوب في التعليم العالي في لبنان لمواكبة التطورات العالمية الموازية. وقد أظهرت تقاطعات إحصائية عدة جرى اختبارها، مع تحليل كفي لمواقف الفاعلين الأساسيين، أن هناك تحولاً ما باتجاه ثقافة مشجعة للتحول ذاك على مستوى الدراسات العليا، ما يقود إلى تشكيل مقترح لخطة استراتيجية تؤدي في النهاية إلى إدخال ناجح للتعليم بواسطة الشبكة إلى أنظمة التعليم العالي في لبنان، وهو توقع إيجابي يمكن متابعة نتائجه.

DEDICATION

I would like to dedicate this work to very special people in my life, my father Prof. Mohamad Shaya and mother Raghida Gharzeddine, who raised us on the intrigue interest for research and critical thinking. I am forever thankful, your strength, love and support have carried me over the years.

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1 Introduction

1.1 Background

An examination of the dominant features of education and academic institutions of the third millennium shows that chief characteristics are “flexibility, inclusiveness, collaboration, authenticity, relevance and extended institutional boundaries” (Felix 2005 in Peachey et al. 2010, p. 91). Responsibilities of learners and lecturers have transformed significantly as educational goals have expanded to include self-directed learning, digital literacy, continuous global dialogue, attainment of meta-cognitive skills, and processes comprise holistic curricula, critical thinkers and problem-solvers (Felix 2005). Accordingly, higher education must undergo necessary changes to adapt the traditional educational structures to the uprising knowledge age, represented through the integration of information technology denoted by ‘digital age’. The rapid evolution of knowledge-based society is partly driven by the emergence of new fundamental technologies that reshaped the forms of communication, thinking and therefore, learning, diminishing the constraints and of space and time (Collins and Halverson 2009; Raab et al. 2002). The new learning experience was coined as ‘e-learning’, an element of the telecommunication model of distance learning, where students and faculty are joined by technology and educational media, rather than traditional learning setup (Allen et al. 2004; Berge and Collins 1995; Liaw 2008; Raab et al. 2002). Evidence indicates that early forms of online education emerged back in the 19th century, where the fundamental principles grounding the concept of e-learning were well acknowledged (Cross 2004).

Today, more than ever, e-learning has gained better reputation and wider popularity and has become a viable alternative to classical forms of education, poised for substantial growth

over the next several years (Allen et al. 2004; Allen & Seaman 2014; Cross 2004; Liaw 2008; Ni 2013; Drouin et al. 2015; Smith and Macdonald 2015; Sun et al. 2017). Aiming towards achieving high learning outcomes, reaching more learners and expanding education opportunities (Hill 2002; Hofmann 2002; Owston 1997; Song et al. 2004), many research studies advocate the benefits of online education (Bouhnik and Marcus 2006; Bowen et al. 2014; Drouin et al. 2015; Liaw 2008; Mehanna 2004; Ni 2013; Raab et al. 2002; Smith and Macdonald 2015).

There is a dearth of literature on e-learning (Aparicio et al. 2016) that continues to grow steadily. However, despite reported benefits, the global inquiry remains vague as where does online education fit in higher education (Willcox et al. 2016)? Why are governments slow in taking the lead (European Commission 2014)? Does online learning have the capacity to modernize higher education institutions in Lebanon (European Commission 2014)? Are institutions ready for this change (European Commission 2014)? Then more specific questions are of debate as to, what drives successful learning environments (Ni 2013)? What are the prospects and challenges (Bacow et al. 2012)? As the availability and convenience of internet technologies continue to significantly grow, responses to these questions are needed more than ever (Drouin 2015; Goodyear 2001; Hofmann 2002; Song et al. 2004). Online education presents major curriculum as well as pedagogical concerns (Allen et al. 2004; Hoffman 2002), especially, that the progression and evolution in distance education is not associated with enthralling empirical evidence in achieving high learning outcomes and retention rates (Boston et al. 2011; Brown 2012; Hannafin et al. 2003; Song et al. 2004; Xu and Jaggars 2011)

Counter to neighboring countries, to date Lebanon doesn't officially recognize distance learning due to a number of reasons, among which is lack of quality assurance agency and abundance of higher educational institutions, relative to small country in geographical area like Lebanon (El Amine 2016). Therefore, it is not surprising that the Middle East investments in e-learning falls second to last behind Africa, equivalent to \$683 million by 2016, whereas North America rank first with \$23 billion worth of investments along the same fiscal year (El Amine 2017). Ministry of Education and Higher Education has put forth some efforts in embracing online education, such as creating a taskforce of different expertise to draft a national strategy and create a framework of action to recognize and accredit distance learning, yet the most serious efforts remain from two leading American universities in Beirut and the Arab Open University, that is branch of online learning network.

1.2 Problem Statement

This research argues that primitive systems continue to govern the work of higher education legislative academic decision makers in Lebanon that is not par with advancements happening in education system worldwide, hence, denying institutions from the chance to maintain competitive advantage in a fast-changing market and provide better quality and access to education. Those universities which do not embrace online education will be left behind in the race for globalization and technological development.

1.3 Aim and Objectives

The main aim of this research is to obtain a finer-grained understanding of the primary opportunities and challenges to adopt and accredit online education in Lebanon, then offer a strategic plan for successful implementation of online education. In an attempt to induce micro-levels of analysis, investigation took place over three stages: the first reflects the current state of online education in Lebanese higher education sector, denoted by Pre-Study Model, followed by in depth stakeholder analysis of students, faculty, academic leaders and academic decision makers (i.e. Ministry of Education and Higher Education) in Lebanon. At this stage, the readiness and perception of students and faculty for online technologies will be explored in addition to the perception of other key stakeholders' and academic decision makers' views to derive a model on the dominating trends and patterns pertaining to prospects and barriers towards adoption, then a final study model on the emerging current status of online education. The third stage will offer solutions to derived barriers and strategies for effective implementation of online classes and programs. This study highlights five objectives:

- Assess student readiness, willingness and acceptance of online education
- Assess faculty readiness, willingness and acceptance of online education
- Explore senior institutional executives and academic decision makers' perception towards online education
- Offer solutions to barriers impeding adoption of online education and develop a strategic plan for implementation of online education

1.4 Research Questions

The study seeks to answer the following main and sub-research questions:

What are the prospects and barriers impeding adoption of online learning systems at higher education in Lebanon?

- What are the prospects and barriers in the e-learner readiness level among higher education students in Lebanon and perception towards online learning?
 - What is the level of e-learner readiness among students to enroll in online classes?
 - What are the factors affecting e-learner readiness of the Lebanese student?
 - Is there a relationship of statistical significance between student e-readiness and willingness to learn online?
 - Is there a relationship of statistical significance between student e-readiness variable and its components?
 - Is there a relationship of statistical significance between student various demographic variables and e-learner readiness?
 - How could the acceptance of online education among Lebanese students be described?
- What is the Lebanese faculty readiness level to teach online and perception towards online teaching?
 - What is the level of e-readiness to teach online among faculty?

- Is there a relationship of statistical significance between faculty e-readiness and willingness to teach online?
- Is there a relationship of statistical significance between faculty e-readiness variable and its components?
- Is there a relationship of statistical significance between student various demographic and e-readiness?
- How could the faculty acceptance of online education be described?
- How compatible are the current adopted pedagogies with online education?
- What is the perception of key higher education institution's senior stakeholder in Lebanon towards adopting online education?
- What is the perception of the higher education regulatory body in Lebanon towards adopting online education?

It is to be noted however, that Study 1 will hereby be referred to the data collection from student e-readiness and perception towards online learning, Study 2 for faculty e-readiness, perception and pedagogical readiness, Study 3 for perceptions of senior executive leaders of higher education institutions and Study 4 for perceptions of Ministry of Education and Higher Education (MEHE) data.

1.5 Hypotheses

A number of hypotheses were tested:

H1: There is relation of statistical significance between *E-Learner Readiness* and *Willingness*

H2: There is a relation of statistical significance between e-learner *Readiness* and its components.

H3: There is relation of statistical significance between demographic variables and *E-learner Readiness*

H3a: There is relation of statistical significance between *Age* and *Readiness*

H3b: There is relation of statistical significance between *Gender* and *Readiness*

H3c: There is relation of statistical significance between *Marital Status* and *Readiness*

H3d: There is relation of statistical significance between *Educational Background* and *Readiness*

H3e: There is relation of statistical significance between *Enrolling University* and *Readiness*

H4: There is relation of statistical significance between *Faculty E-Readiness* and *Willingness*

H5: There is a relation of statistical significance between *Faculty E-Readiness* and its components.

H6: There is relation of statistical significance between demographic variables and *Faculty E-Readiness*

H6a: There is relation of statistical significance between *Gender* and *Readiness*

H6b: There is relation of statistical significance between Age and Readiness

1.6 Conceptual Framework

The below mapping (Figure 1.1) summarizes the study's main framework guided by the research objectives and main research questions:

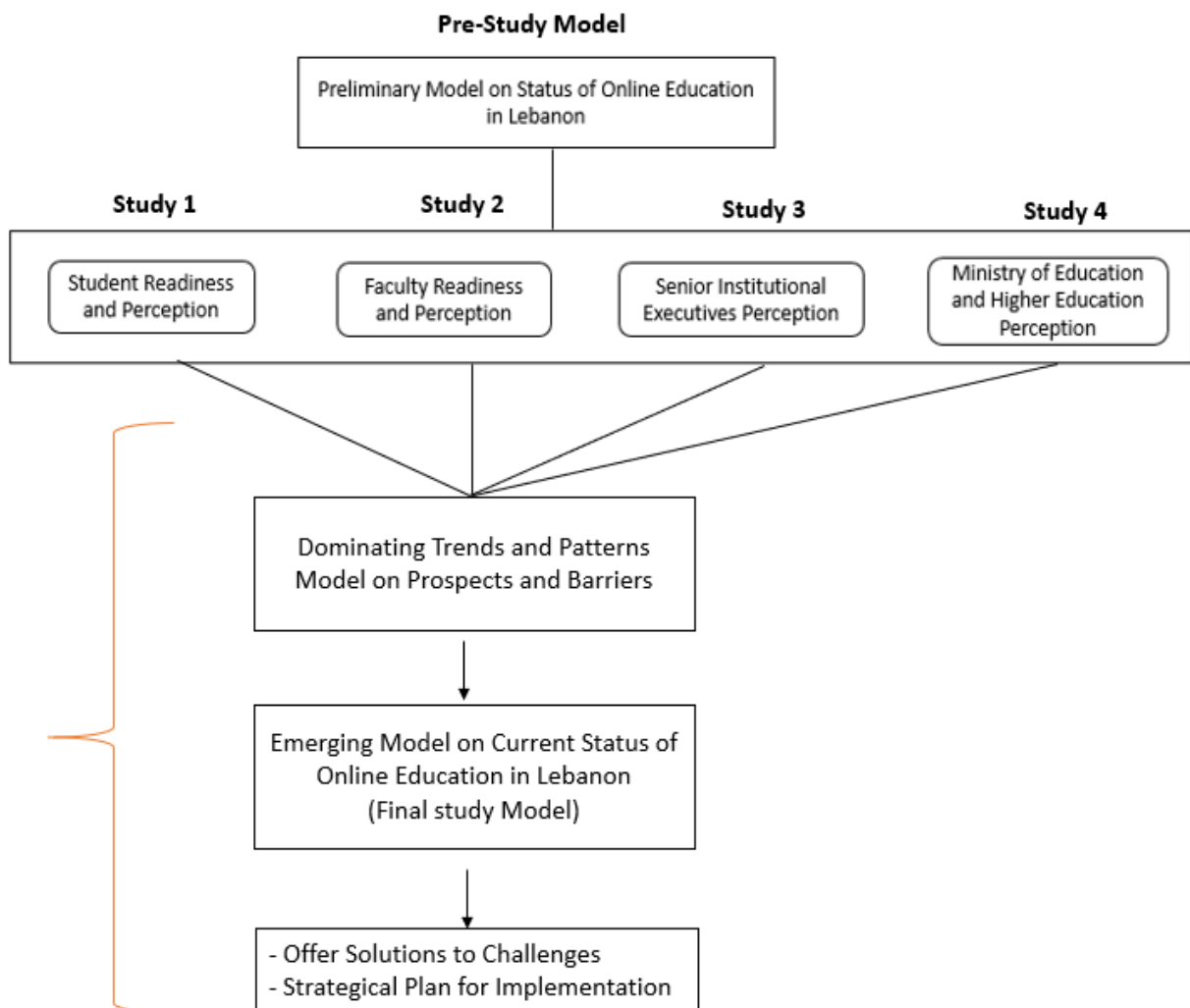


Figure 1.1: Conceptual Framework

1.7 Rationale of the Study

As expectations for institutional performance and accountability in higher education have broadened over the past years, campuses strived to develop processes and strategies to promote the effectiveness of their institutions (Burke and Associates 2005). Along the same lines, a growing body of knowledge suggest that the new and rapid evolution in technology has the potential to increase faculty productivity, improve learning outcomes and reducing instructional costs and other services (Bacow et al. 2012). With prospects and barriers, the development and management of quality e-learning is still challenging, especially that the progression in distance education is not associated with enthralling empirical evidence in achieving high learning outcomes and better retention rates (Boston et al. 2011; Brown 2012; Drouin 2015; Hannafin et al. 2003; Song et al. 2004; Wenchiekh and Lan-Yin 2010; Xu and Jaggars 2011). Accordingly, and as the availability and convenience of internet technologies continue to significantly grow (Drouin 2015; Goodyear 2001; Hofmann 2002; Song et al. 2004), it is important to understand the current status of online education in Lebanon, why hasn't online learning been accredited yet, what are the obstacles standing in the way, is the country ready for online learning, etc. Responses to these questions are needed more than ever. In parallel, it deems necessary to record the pioneering initiatives to set up and run online courses and programs in some of the most prestigious universities in Lebanon, the systematic implementation and lessons learned, as a foundational stage for potential growth of the industry, in attempt to get on with global progress and support the current efforts.

This study argues that adoption and implementation of online learning “may result in abrupt change in content and pedagogy of teaching” (Abou Chedid and Eid 2004, p. 15) that neither

Ministry of Education and Higher Education (MEHE) nor institutional executives and academic decision makers in Lebanon are ready for, due to outdated processes, lack of modernization and absence of smooth transition from primitive to advanced education. Thus, resulting in continuous proliferation of sporadic education on the cost of life-long learning, jeopardizing the higher education system in Lebanon to be primitive, economically depressed given the decreased state funding and reduced revenues and failing to meet a broader range of learners' needs (European Commission 2014). The final outcome would be a system unable to face a number of significant challenges at the national, regional and international levels, such as maintaining excellence, ensuring affordability of tuition fees, boosting enrollment and retention rates, shortage of funding and widening access to high education. Such obstacles are reported through a number of manuscripts such as University of Buffalo, Center for Education Innovation (2016), Board of Trustees Mills College Educational Policy Committee (published in Bacow et al. 2012), and a joined report from the presidents of Harvard University, Stanford University, and Ohio State University during a panel discussion (published by Harvard website 2016), that *World Declaration on Higher Education for the 21st century* in 1998 has already highlighted and warned universities against. As a result, online education "has been touted as a way to address some of the challenges higher education face and extol as a tactic for staying competitive" (University of Buffalo 2016, p. 1), showing rapid expansion compensating for the downturn of classical enrollments (Lokken and Mullins 2014). The main drivers for e-learning expansion are linked to economic, socio-political and technological emerging circumstances. The prevailing expectation among the developing countries is that implementation of online

education at higher education would allow for offering the ‘21st century’ experience and helps in promoting better quality of education (UCC 2012). In that sense, through embracing online education, Lebanese higher education sector has the chance to benefit from the expansion of advanced technologies and related pedagogies to promote, efficiency, effectiveness and transformation (Konwar 2017). The combination of expansion in availability of e-learning platforms, increased interest in life-long skills and funding limitations, has forged a fundamental incentive for institutions to embrace this technology and develop online programs, that if missed universities will lose their competitive edge and the race for modernization and globalization (Volery and Lord 2000).

Unfortunately, in Lebanon, achievements and progress in e-learning is still far from the rest of the world, with particular reference to the West (Sahyoun 2014), with a great disconnect between the growing international needs of students and offerings of higher education. Two universities were able to break the static dispersed state and cause a revolution in the MEHE processes and private sector capacity, with the ProGreen Diploma as the first online post-graduate diploma offered with standards equivalent to master’s program through two leading American universities in Lebanon, as part of European Union funded project. Driven by the urge to modernize Lebanese higher education through online education, concurrent with the success of Pro-Green Diploma in meeting its goals versus international “wrestling with how to respond to ever-increasing accountability demands” (Ni 2016, p. 200), this research aims to document the implementation of Pro-Green, and unravel the intertwined threads amongst different key stakeholders in terms of needs, readiness and perception, to provide a clear and unambiguous picture on the current state of online education, the opportunities and

challenges. It is expected that challenges at the level of social, financial, technical and political to surface. A strategic implementation plan would then be delineated to try to capitalize on prospects and turn challenges into opportunities to be able to incorporate online education, either through full fledged online programs or increased hybrid courses offering. Particularly, findings from the empirical findings including ProGreen program executives, in addition to international literature reflecting broader experiences, will be used to offer solutions to the barriers derived from different stakeholders, and in that sense any implementation strategy offered by this study will be built on empirical research supported by theoretical foundations.

This study aims to digress towards deeper and broader examination of current state of online education in Lebanon and ultimately deriving recommendations about implementation of online learning in that context. It is expected to uncover many hidden aspects and variables in Lebanon that are necessary in any policy decision seeking adoption and implementation of online education, namely: e-readiness, behavioral intention and attitude towards online education by students first, then in addition to pedagogical readiness by faculty next, then attitude of senior stakeholders and policy makers. Accordingly, this study serves many purposes, first change is inevitable, and online learning could be used as a catalyst to induce change and reform at the level of higher education in Lebanon, with important attention to the Public University that is suffering from devastating state, where their graduates are among the best in academic rigor and qualifications across the nation, yet they are not appealing to the market because of lack of exposure to advanced technology enabled pedagogical systems that would nurture life-long and professional skills. Second, this study

aims to show the level of evolution and progress the nation has witnessed in terms of online education. Third, it is clear that many private universities are undergoing needs assessment to understand where online education fits in Lebanon, hence, the outcomes of this study will be of utmost importance to know the availing capacity in terms of strengths and weakness among students and faculty. Furthermore, this manuscript is considered as a consolidated report that could serve as a roadmap for the legislative authorities in education in Lebanon, to understand the earlier state, the current evolution being witnessed in Lebanon, the acceptance of online education by students, and the needs of faculty.

Such comprehensive findings would leverage the empirical growing body of knowledge on the need to integrate online learning systems in developing countries, assessing the needs versus the capacity of the nation. It would add to the theoretical body of knowledge on the needs of Lebanese students and faculty, their e-readiness, their preferences, the pedagogical readiness of faculty and the needs of leadership, and feed in the growing international literature on e-readiness of education sectors, the experience of Lebanon. This research stipulates that advances among different fields of education are fundamental and should be part of ministries of education agenda across the region, along with the transformative improvements required to cater for the growing and pressing educational needs among different stakeholders and community, to promote better learning for their citizens and control the negative influence of the political instability and global challenges facing higher education sector.

At the practical institutional level, based on the derived findings, the study aims to produce a proposal on the systematic implementation of online learning in higher education in

Lebanon with possible options. These options would be assessed and evaluated at a later stage. It is expected, that the findings and the proposal will contribute to wider university decision-making about the development and implementation of online courses and could be used by campus leaders and head of departments to increase learning outcomes, performance, and quality of academic programs. It presents to be a valuable resource for institutions that are at the early stages of developing online curricula or for institutions striving for accrediting their online degrees since the adopted benchmarks of effectiveness dovetail with the guidelines for international accreditation. It is anticipated that the study of effectiveness along with faculty perceptions will bring confidence to the concept of e-learning in Lebanon, inducing a movement towards recognizing online education and better student recruitment. A small number of studies have been carried out in the Middle East to investigate the use of e-learning in education. With the constant growth of the Web influences and changes how online courses are designed and implemented, continued studies of learners' perspectives of online learning environments are needed in order to build more effective Web-based instruction that can optimize the learning experience within this ever-changing landscape. This study seeks to add to the theoretical body of knowledge and literature, the experiences of e-learning in Lebanon, the prospects and challenges.

1.8 Structure of the Dissertation

This dissertation comprises five chapters, namely, Chapter 1 assigns the phenomenon under study through a clear introduction, problem statement and research question that the

researcher seeks to answer, supported by a conceptual framework on how different concepts of the phenomenon connect with each other and outlining investigation. Chapter 2 on theoretical framework and literature review, aims to present first the theoretical foundations governing this study, serving as the lens through which research problem and investigation is being evaluated. Literature review seeks to revise existing literature on the various concepts being studied from local and international perspective, leading to a Pre-Study Model on status of online education in Lebanon.

This model acts as a reference point to build on as investigation and data analysis progresses. Chapter 3 on methodology introduces research approach and design, philosophical underpinnings, instruments, data analysis and ethical considerations in detail. Chapter 4 covers data analysis, results and discussion of findings (represented in Figure 1.2). Data analysis was conducted over 4 layers, where Layer 1 is characterized by analysis of Study 1, Layer 2 of Study 2, then Layer 3 of Study 3 and Study 4.

Study 1 comprised quantitative and qualitative analysis of data, followed by triangulation and discussion of findings. Special attention is given in comparing derived findings against earlier literature on Lebanese context. Accordingly, analysis led to Study 1 Model 1, then Model 2, then Model 3 where prospects and barriers pertaining to e-learner readiness and acceptance of online education emerge. Similarly, Study 2 on faculty readiness, acceptance and pedagogy followed similar design, leading to the formation of Study 2 Model 3 on prospects and barriers specific to faculty. Further models were also derived from Study 3 on senior institutional executives and Study 4 on MEHE. Layer 4 would follow, where findings were integrated and triangulated against literature using Aparicio et al. (2016) e-learning

framework to develop a consolidated model on prospects and barriers, presented as dominating trends and patterns model, then a final study model on the emerging current status of online education in Lebanon.

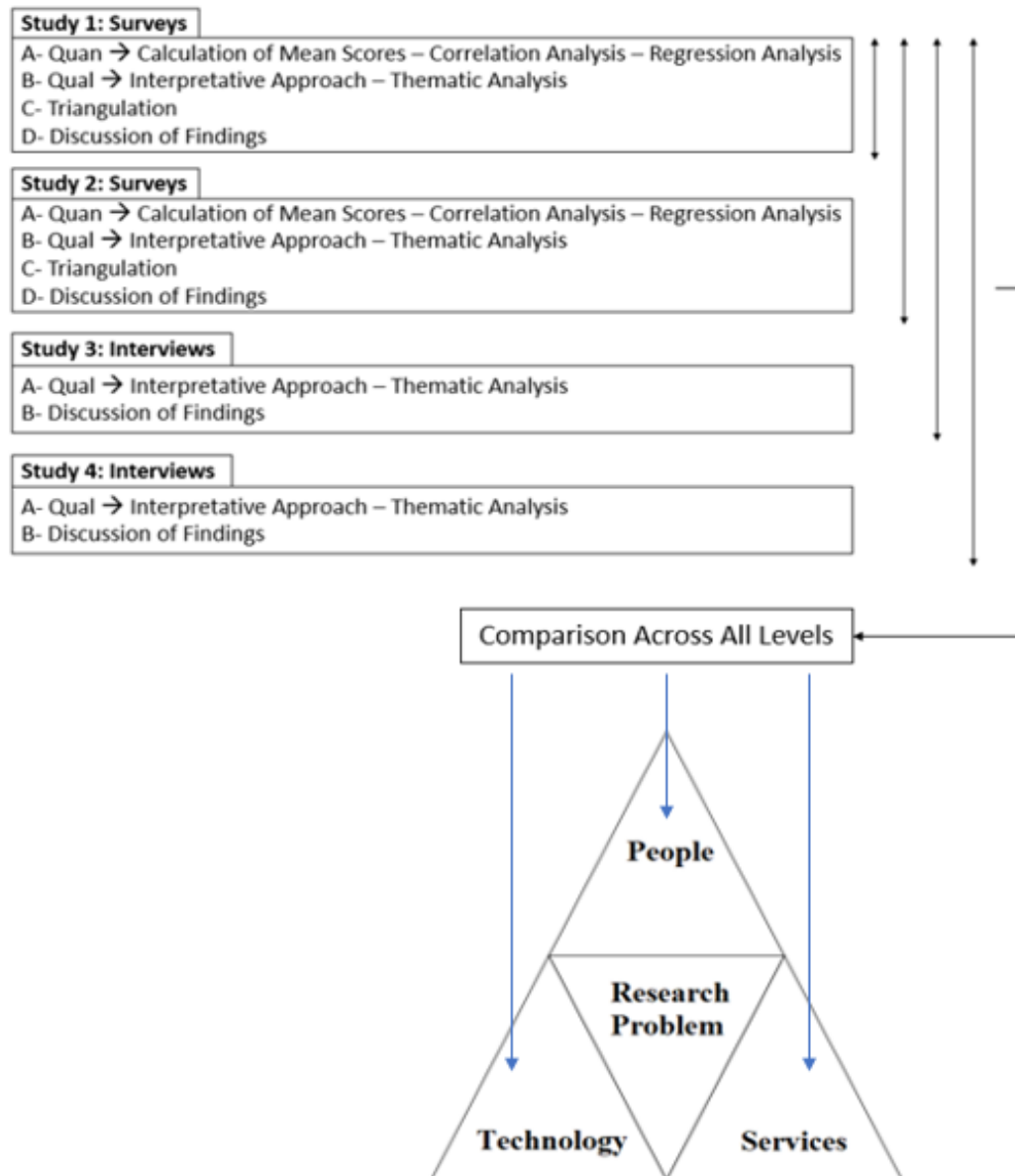


Figure 1.2: Data analysis Framework

Based on empirical findings and theoretical underpinnings, Chapter 4 will offer an efficient strategic implementation plan for online education in Lebanon, that would partially

encompass solutions to derived barriers as well. Finally, Chapter 5 on Conclusion summarizes key findings pertaining to main and sub-research questions, stage the empirical, valuable and practical contributions this study has to offer, limitations and assigns a conclusive statement.

The next section, Chapter 2, introduces the theoretical framework, literature review and Pre-Study Model.

2 Literature Review

2.1 Overview of Chapter

This chapter will cover 9 main sections, namely, working definitions, theoretical framework, evolution of the concept online education and its functionality, facts and figures on online education, higher education sector in Lebanon, e-learner readiness literature review, faculty readiness literature review, acceptance of online education, and finally, the status of online education in Lebanon that would lead to Pre-Study Model.

2.2 Working Definition

Education comes in different forms, where the incorporation of technology into the field of education resulted in a huge shift in learning practices. Knowing that the world will continue to use e-learning and online learning in various and sometimes ambiguous ways, the terminology refers to the ‘online’ kind of interaction taking place between learners and instructors (Bruce & Curson 2007; Dougiamas 2011; Tortora et al. 2002; Yuuichi et al. 2006). The origin of online instruction is agreed to be distance education, a concept that emerged from mere innovative idea to be a competitive service offered by big universities and colleges, or a central strategic business plan to those institutions or corporates yet to offer (Downes 2005; Morabito et al. 1997). In essence, e-learning is the most recent evolution of distance learning—a learning situation where instructors and learners are separated by distance, time, or both (Raab et al. 2002). E-learning uses network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere. The benefits of e-learning have been discussed in many articles (Bouhnik & Marcus, 2006; Liaw, Huang, & Chen, 2007; Raab et al., 2002; Shotsberger, 2000). Among the various types of distance

learning that are available today are online learning, mobile learning, learning by correspondence, CD ROM classes, etc.

Literature agrees on the lack of widely accepted definition of online learning, and accordingly this research understudy will adopt the definition proposed by Bacow et al. (2012), in their report *Barriers to Adoption of Online Learning Systems in U.S. Higher Education*. In the current research understudy, **online learning and e-learning will be interchangeably used that is restricted to higher education level and referring to the “highly sophisticated, interactive technologies in which instruction is delivered online and is largely machine guided” (p. 34)**, although some delivery might be a blend of online and face-to-face.

2.3 Theoretical Framework

This part outlines the theories utilized in the current research, namely, Social Cognitive Theory and e-learning theoretical framework. Specifically, this study is grounded with the fundamental relationships between social cogitative theory and distance learning, that guided the selection of models and instruments for data collection. As a result, the E-Learning Theoretical Framework was chosen as a foundational phase to investigate the phenomenon understudy, build on the data analysis and generate findings.

2.3.1 Social Cognitive Theory and E-Learning

This study aims to unfold the current status of online education in Lebanon, students' e-

readiness levels, acceptance of online education and willingness to pursue online degrees, faculty e-readiness, their willingness to teach online, their perception of online education, along with perception of senior executives and decision makers. The aim is to generate the prospects and barriers impeding adoption and implementation of online education. It stems from social cognitive theory perspective of a belief that students exhibiting high levels of self-regulation and self-directing skills, show adequate levels of motivation, apply effective independent learning strategies, and respond effectively to situational and contextual demands (Pintrich and Schunk 2002). Researchers draw on the theory to explain the kind of interaction between three main influences, namely, (i) personal, (ii) behavioral, and (iii) environmental factors, to promote success through self-regulated learning (Alem et al. 2016; Wang and Jin 2007). The concept of self-regulation is not new, rather was first coined by Zimmerman (1989) to describe “students’ active involvement in self-motivation and the use of appropriate learning strategies to pursue self-established goals” (Wang and Jin 2007, p. 601). The theory holds that learning happens through observing the behaviors, attitudes and output of others’ behaviors. Successful learners exhibit high degree of motivation presented as personal influences, demonstrate efficient strategies of learning regarded as behavioral influences, and react better to external contextual environment, known as environmental influences (Pintrick and Schunk 2002). Which brings about the importance of the psychological, technical and attitudinal readiness of the learner to engage in online learning activities, sustain motivation, and promote success of implementation strategies.

The theory started as Social Learning Theory by Bandura in the 1960’s, and is now being used in many areas such as psychology, education, telecommunication, etc., and states that

a person acquires knowledge through by observing others through social interactions, experiences, predispositions, etc. By basing learning on observation, imitation and modeling of one another, the SCT bridges the gap between “behaviorist and cognitive learning theories because it encompasses attention, memory and motivation” (learning-theories.com). Thus, individual’s behavior could be explained as some ongoing interactions, combining cognitive, behavioral and environmental influences (Wang and Jin 2007). In unravelling the relationship between social cognitive theory and distance learning, the first impression would be that online education encompasses a set of skills that function beyond the boundaries of the theory, as it targets individual learning versus group of learners. However, the essence of the social cognitive theory that emphasizes the imitation of behavior, may not be from an individual who is physically available to transfer the knowledge, rather may be in the form of verbal guidance and teaching, hence, audios, videos, and the inducing the applicability of social cognitive theory into e-learning. Today’s technologies, such as videos, audios and other streaming software is capable of recreating their experience through allowing real-time presentations by faculty and tutors. The Social Cognitive Theory will be adopted to help in shaping the investigation, through first utilizing e-learning theoretical framework that is brought forth by Aparicio et al. (2016), focusing on the human elements, technology and pedagogy of e-learning as main pillars for successful e-learning systems. Second, questionnaires of foundational models that are consistent with the principles of the social cognitive theory were employed. Third, interpretations of meaning and perceptions from qualitative collected data will focus on the self-regulatory skills of students in the light of motivation, learning strategies and interactions. Wang and Jin (2007) ascertain that “in

order to facilitate self-regulated learning, teachers must consider the interactions of environmental influences, students perceptions and learning behaviors” (p. 601), highlighting the importance of faculty practices and perceptions around interaction (Compeau et al. 1999; Wang and Jin 2007) and perceived usefulness.

The current research is supportive of the line that perceives a successful online learning system as a function of many pillars that are of different nature. Online learning depends by far on the students’ interpersonal capabilities, such as maturity, self-regulation skills, time management, taking charge of own learning, and accordingly, the student’s active involvement in self-motivating plays a big part in achieving the learning goals. Similarly, the environmental influences and learning behavioral presents as an integral part, thus, successful online learning will require the proper blend between personal, behavioral and external influences.

2.3.2 E-Learning Theoretical Framework

Aparicio’s (2016) framework presented in Figure 2.1, perceives e-learning systems as a function of three main dimensions: e-learning stakeholders, e-learning technologies and e-learning activities. These elements will guide the investigation on the level of preparation of the country for online education, through focusing on e-learning systems stakeholder readiness analysis, e-learning technologies and issues related to pedagogy. The framework will bring about the current status of online education an identify the barriers hindering progress towards accepting and implementing online education. Based on the derived

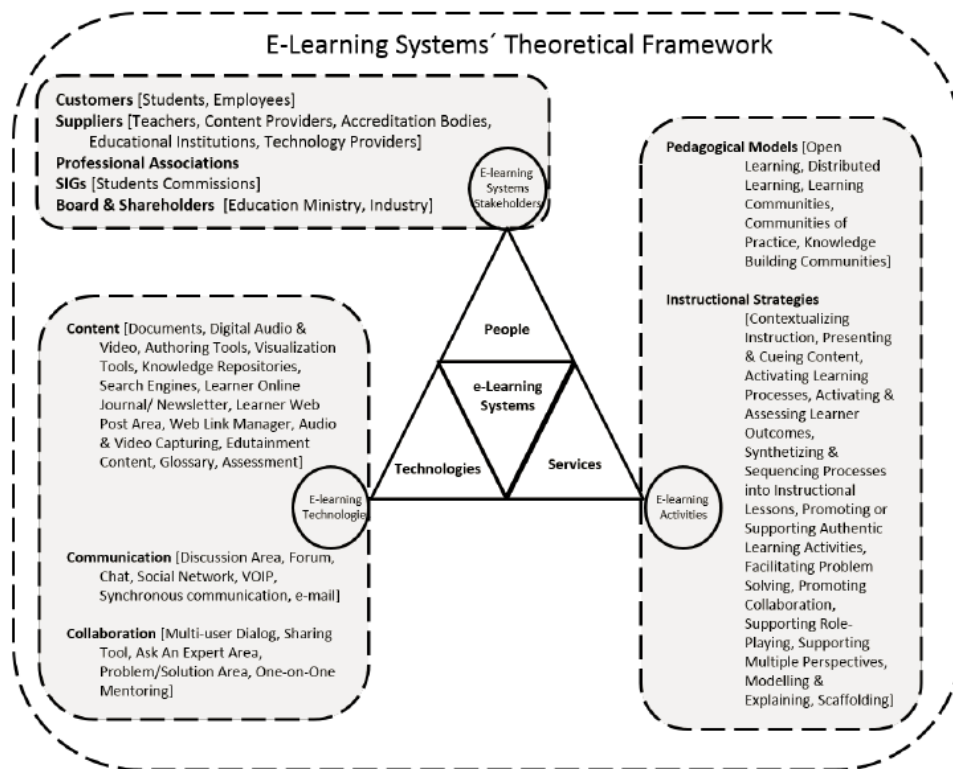


Figure 2.1: E-Learning Systems Theoretical Framework (Adapted from Aparicio et al. 2016)

findings and theoretical underpinnings, this study will outline a strategical plan that will help in overcoming the barriers and turns online education into opportunities.

E-Learning System Stakeholders:

Conceptually, a system is an artifact, and technology is an enabler where its use in education is more of an “artificialization” (Beckman 2002) that is a complex and interchanging combination between people and technology. Stakeholder analysis in e-learning indicates the presence of internal and external group that would either directly or indirectly affect an organization. Stakeholders of an e-learning system could be categorized into:

- Customers: students, employers, technology providers, etc.

- Suppliers: educational institutions, accreditation bodies, faculty, content providers, etc.
- Board and shareholders: Education Ministry
- Professional association: Teachers' association
- Special interest groups: Students' Commissions

The stakeholders could be summarized in the below Table 2.1 (Aparicio et al. 2016). From stakeholder perspective, this research will focus on the perception and attitude of students, educational institutions, faculty, faculty associations, and Ministry Executives. Customers are considered to be “ultimate users of the system” (Aparicio et al. 2016, p. 298), and they are of major importance for this research as e-learning is supposed to serve the student and present as a channel of communication between the instructor and the learner. Faculty are the group of people who directly interact with the system and help in implementing the institution's vision.

Stakeholders	Group	Direct Action	Internal	External
Students	Customers	√		√
Employers	Customers	√		√
Educational Institutions	Suppliers	√	√	√
Accreditation Bodies	Suppliers	√		√
Teachers	Suppliers	√	√	√
Content Providers	Suppliers	√	√	√
Education Ministry	Board and Shareholders	√		√
Teachers' Association	Professional Associations	√		√
Students' Commissions	Special Interest Groups	√		√
Technology Providers	Suppliers	√		√

Table 2.1: E-Learning Systems Stakeholders (Aparicio et al. 2016)

E-Learning Technologies:

Aparicio et al. (2016) model categorizes the technological features of e-learning into 3 mains

areas of learning, namely, content, communication and collaboration. The technology provide support that integrates content, enables communication and expedites collaboration through providing the necessary tools.

Content: The technologies that are used in preparing and displaying content such as, documents, digital audio and video, Authoring tools, Knowledge Repositories, Search Engines, Learner Web, etc.

Communication: Tools through which communication occurs, namely, e-mails, synchronous, asynchronous, course management tools, discussion forums, etc.

Collaboration: Tools that facilitate collaboration among students, such as: dialogue, sharing tool, ask An Expert Area, problem/Solution Area, etc.

E-Learning Activities: These are the outputs from e-learning, that are a function of two constructs, first the students learn, denoted by pedagogical model, then the learning strategies associated with the pedagogy, referred to as the instructional strategies.

Pedagogical Model: The mechanisms that link e-learning theory to e-learning practice, and are: open learning, distributed learning, learning communities, communities of practice, and knowledge building communities.

Instructional Strategies: They are the strategies used to engage the learners and enable learning. Namely they are, authentic activities, problem solving, role playing, articulation and reflection, collaboration and negotiation, multi-perspectives, modeling and explaining, and scaffolding.

The above theoretical model will guide the analysis towards assessing particular readiness for online education. In other words, the researcher will examine how often are the above elements being adopted in the classical modes of teaching in Lebanese higher education, and in the few e-programs running in the country at higher education level. Accordingly, this might indicate whether Lebanon has the necessary infrastructure for implementing online learning in their campuses.

2.4 Online Education Concept

This part will present an overview on the concept of online education through evolution of the concept, functionality of online education, online learning in education sector versus corporate, and best practices in online education.

2.4.1 Evolution of Online Learning

Morabito et al. (1997) describe the growth of e-learning as an evolution that took place over four generations: (a) printed instruction, (b) early technology in broadcasting systems, (c) online instruction, and (d) web-based teleconferencing. E-learning at higher education may take several forms, from an online platform that would organize and present the courses, known as learning management system with various famous companies such Blackboard, WebCT and Moodle dominating this sector, to fundamental online courses, where learners and instructors are separated by space and time, and joined by Internet.

This thesis will focus on the latter, however, in all cases e-learning whether through online platforms or mere courses, has become so vital that alone would provide international competitiveness given the dynamic and changing markets, and would certainly require enormous injections of funding to prepare the technology infrastructure.

In that sense, the nature of the Web has changed from being a medium for transmitting information and data to platform where data is being created, blended, amended, shared and passed across. The nature of the user has also shifted from just reading and listening to interacting, sharing conversations, exchanging knowledge, taking courses and earning diplomas and degrees. Users expectations have tremendously increased and are now operating at “twitch speed” (Downes 2005) expecting immediate responses, hence, behaving like a busy cohesive network, that would soon turn into an online community of users and learners. As a matter of fact, these changes have reached corporate sector earlier and longtime back in the form of adopting and adapting e-learning, where it is being utilized in conference calls, training opportunities, videoconferences and completing requirements for major certificates, only then the education sector has felt the urge to catch up with these trends.

This online community of users and learners, one form of social network, would turn to be as community of practice, a concept coined by Etienne Wenger, a well-practiced researcher in learning and technology, where members interact and learn together and develop a shared repertoire of resources (Wenger 1998). Discussions were induced and supported by learning managements systems and limited to a particular group of user learners who would share a

common trait or interest such as a class in a college. Reaching far beyond the borders of classmates, students would find themselves interacting and discussing topics with other students worldwide, in different universities and from different countries.

2.4.2 Functionality of Online Learning

Course management systems (CMS), are online learning platforms that are either used to complement classical face-to-face classroom set ups, or host virtual classrooms, such as online courses that don't require students' physical appearance in the class. In earlier years, faculty were required to create their virtual classrooms without a digital platform in place, which was subject to plenty of human error and poor quality in general. Nowadays, a complete industry has emerged, where the course management system is now known as a set of various software tools that would present as an online platform for course interactions. CMS provides allow users, ideally course designers, to design and deliver their content with a well-structured yet flexible framework that includes various tools to facilitate learning and communication to take place. Famous CMS brands are Blackboard, Moodle, Canvas, Desire2Learn, WebCT, eCollege, etc.

The functionality of CMS enables course content delivery, communication and interaction and evaluation and assessment. It encompasses a variety of common tools that include:

- *Modules* for publishing and viewing materials such as course syllabus and handouts
- *Assignments* for student submission of papers and other assignments

- *Gradebook* where faculty can upload and post their grades and students can view their corresponding grades
- *Announcements* through an integrated email tool enabling users to notify the class or particular groups of students with announcement email messages.
- *Chat* facilitating synchronous communication in written form.
- *Discussion Board* allowing asynchronous discussions and further collaboration.

2.4.3 Online Learning in Education vs. Corporate

E-learning started with the revolutionary introduction of computers and further evolved with the evolving of internet. It used to be called internet learning then Web based training. E-learning offers the ability to share material to virtually anywhere outside the typical old classroom setting using electronics applications and processes. It permits transfer of knowledge and skills via networks, etc. The material can be offered through internet, audio or video tapes, satellite TV and CD rooms. E-learning is utilizing electronic media (mainly internet) to deliver learning, training and educational programs. In this section we will discuss e-learning in the corporate world including several examples. In 2015, the Global Industry Analysts (GIA), confirmed that e-learning is valued at \$56.2 billion out of \$200 billion total corporate training, and will be expected to grow to \$107 billion by 2017. Corporations consider e-learning as cost effective, where they can save between 50% – 70%, through replacing instructor-based training by e-learning. This section will highlight on one sector, to indicate the importance of online learning in corporate sector. Banking

sector is one of the fastest growing industries and one of the heavily regulated ones as well. It is a service-oriented industry where skills of the employees are being tested daily under pressure and fierce competition. The services provided are mainly credit and risk management. For banks to succeed, they have to extensively train their employees and keep their knowledge updated. E learning in this industry play a major role due to the key role the banking sector plays in the economy and the nature of this industry. Delivery of knowledge, skills and training in the banking industry need to be done quickly and effectively in timely manner or else they may bare severe consequences and penalties which may lead to bankruptcy in many cases. Banking organizations need to train employees on major aspects including regulations, software use, use of financial instruments and understanding the overall business process. Concerning regulations training, globalization created a new international medium where staff are dealing with different rules, regulations and even different languages. Thus, the need for E learning to train staff on regulations crossing physical frontiers to virtually anywhere in the where through online classes. As for using E learning to train on software, this need comes from the fact that companies rely on software for analysis and making informative accurate decision. Online classes can be virtual classes that teaches and trains employees on the use of software to obtain the right data and is also useful in educating staff on data safety and training them how to locate and protect sensitive data through case studies and scenarios.

2.4.4 Best Practices in Online Learning

Shutimarrungson et al. (2014), studied the implementation of constructivist-model in an online learning course, and results indicated that participants achieved high score achievement, high critical thinking skills on the posttest. Studying the nature of the learning experience revealed that, the activities were rich in challenging the learners to develop higher order thinking skills, connecting with former experience, responding to the diversity of the learning needs and authentic learning.

This study among many other studies in literature support the conception that pedagogy makes a difference in online learning, and if properly implemented can lead to significant achievement gains and better learning outcomes. Upon scrutinizing literature to look for the most appealing pedagogical features in online education, results indicated the following factors:

- Teachers serve primarily as guides and facilitators of learning, not instructors. Learning is learner centered (Brookfield 1995); Chen 1997; Huang 2002; Schell and Janicki 2012; Spitzer 1998; Wagner and McCombs, 1995)
- Learning takes the form of real world scenarios emphasizing authentic learning (Carwile 2007; Doolittle 1999; Jonassen, 1994; Koohang et al. 2009).
- The social presence of students incorporating negotiations, discussions and debates (Chickering and Gamson 1991; Chickering and Ehrmann 1996; Jonassen 1994).

- Content should be meaningful, and students should build on their pre-existing knowledge. This feature will be discussed in next section relevant to content development.
- Students should be prompted to hold accountable of their learning, hence, become self-mediated and self-aware, given that a safe environment for questioning and learning is provided.
- Teachers should provide for and encourage multiple perspectives and representations of content (Chickering and Gamson 1991; Chickering and Ehrmann 1996).

2.5 Facts and Figures on Online Education

By 2017, the global e-learning market is classified into academic e-learning and corporate e-learning, depending on the product being utilized and deployed. Technology wise, “market is segmented into Learning Management System (LMS), mobile e-learning, application simulation tool, rapid e-learning, podcasts, learning content management system, virtual classroom knowledge management system and other technologies” (PR Newswire 2017). By end user, e-learning market is categorized into higher education institutions, K-12 schools and other end users. This dissertation will continuously focus on higher education sector and under/graduate students as main end users; however, it will often introduce the corporate e-learning and K-12 sectors whenever deems necessary. The global e-learning market is increasingly developing, where 2013 – 2015 accounted for \$165 billion, and at rate of expansion of 5 to 7%, reaching \$182 billion in 2017, and targeting \$240 to \$275 billion by 2022 – 2023 (Jasmini 2017; Reuters 2017). Enabling factors of sharp market growth are

assumed to be flexibility in learning, low cost, easy access, mobile learning, animated learning that would increase effectiveness, etc. On the other side, constraining factors are represented in factors like “change management, technology obsolescence and vendor-developer partnership”. By 2017, 78% of US corporates have already adopted and implemented some kind of learning Management System (LMS), and in return between 700 to 1000, LMS suppliers in the market. Among the most significant suppliers are “Adobe systems Inc., Apollo Education Group Inc., Cisco Systems, Citrix, HealthStream Inc., McGrawHill, Oracle, Aptara, SAP, Microsoft, Saba Software, Skill Soft, Blackboard Inc., N2N Services, Desire2Learn, Tata Interactive Systems, Articulate and Haiku Learning” (Reuters 2017).

Some of the important statistics presented by the e-learning industry (Jasmini 2017):

- Over the past 20 years corporate e-learning has grown by 900%
- 42% of US corporates reported better return on investment due to adopting e-learning systems
- 99% of portable clients confirm that online learning enhanced their experience.
- By 2019, 80% of web activity will take place through video conference calls.

The trends for 2017 - 2018 are (Jasmini 2017; Panfold 2016):

- Contextualized learning, represented through modernization of current e-learning system designs and approaches.
- Two-way conversation in e-learning, where learners’ needs will inform content, rather than available resources or classical approaches. For instance, ‘e-learning authoring’

tool could be used to fetch needs and elicit responses through sending out polls and questionnaires, that will then in turn help to shape strategy and content.

- Better use of data, where option such as ‘Elucidat’ can allow viewing analytics, that would help in realizing pitfalls and draw plans for personalizing and improving learning content.
- Extensive use of videos in terms of social learning and video learning in online courses. Options like ‘Elucidat’ and ‘Periscope’ provides variety of features to build interactive videos and better use them in designing content.
- Microlearning will be used to personalize e-learning content.
- Social e-learning or ‘informal learning’ provided through e-learning experiences.
- Mobile learning will continue to rise and learning content will be more accessible through mobile devices.
- Performance support vs learning experience

The 21st century in the Middle East has witnessed growing interests in e-learning through considerable investments in innovation leading to better e-learning solutions, while the latter market revenue rising to \$560.7 million by 2016 (Gerenimo 2018). The e-learning and online education market is valued at \$558.1 million in 2016 and expected to reach USD 237.1 Million by 2023. The Kingdom of Saudi Arabia holds largest shares in the MENA market, with expectations of earns reaching \$237 million by 2023 as well. As a result, the *Middle East Online Education & E-Learning Market Size, Demand, Opportunity & Growth Outlook 2023* (Research and Markets 2017) report has been issued from Dublin to reflect and accompany the spanned growth. The report presents historical market data for previous year,

and the at the same time reflects revenue estimates and forecasts till 2023. The scope includes market trends, strategical management and development issues, etc.

Increasing growth rates show that countries are adopting online learning and is being considered as significant indicator in forecasting revenue opportunities. Growth rate by country in self-paced e-learning is by order: First India (55%), then China 52%, Malaysia 41%, Romania 38%, Poland 28%, Czech Republic 27%, Brazil 26%, Indonesia 25%, Colombia 20%, and ranking 10th Ukraine 20%.

2.6 Higher Education Sector in Lebanon

Through Article 10 and suggestions for reforms, the Lebanese Constitution and the Taef Agreement have emphasized the importance of education and the right of the citizen for accessibility and equality in education opportunities. General principles and guiding regulations were defined, and confirm that “Lebanon abides by, including: Declaration of Human rights; the International Convention of Economic, Social, and Cultural Rights; and the International Agreement on the Rights of the Child” (BankMed 2014, p. 3). The strategic approach to education is found in Figure 2.2.

The education sector is amongst the key contributors to Lebanon’s GDP. Increased expenditure has always been documented, led by the growing awareness to the importance of education. Knowing that spending on public schools and institutions is by far less than the private sector (Figure 2.3), the latter expenditure reached \$1,783 million by 2011,

contributing to 4.4% of national GDP, and a total of 6.6% (Figure 2.4) by the entire education sector.

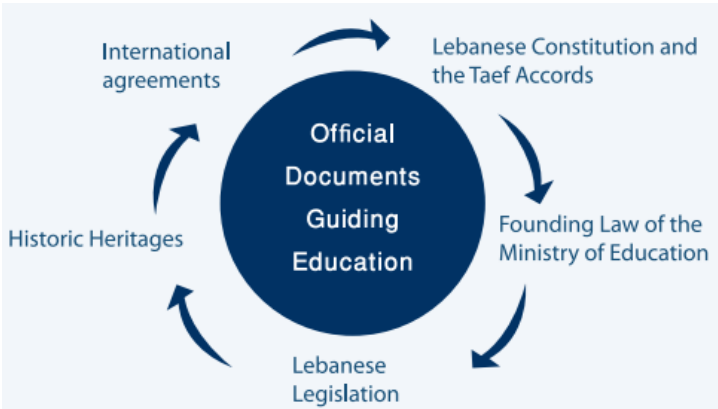


Figure 2.2: Strategic Approach to Education (BankMed 2014)

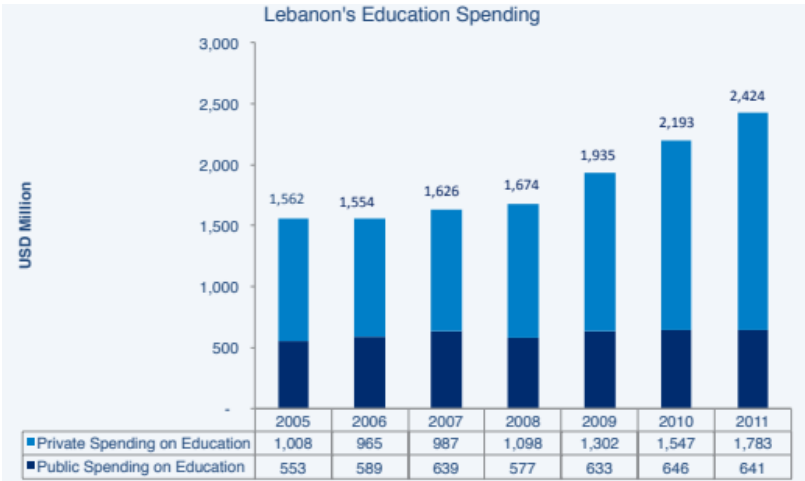


Figure 2.3: Public vs Private Spending in Education Sector (BankMed 2014)

Compared to the region, public spending on education is considered as of the lowest. Public expenditure on education in 2012 represented only 1.6% of GDP, compared to Kingdom of Saudi Arabia (KSA) 5.6 % and Tunisia 6.2% (Figure 2.5).

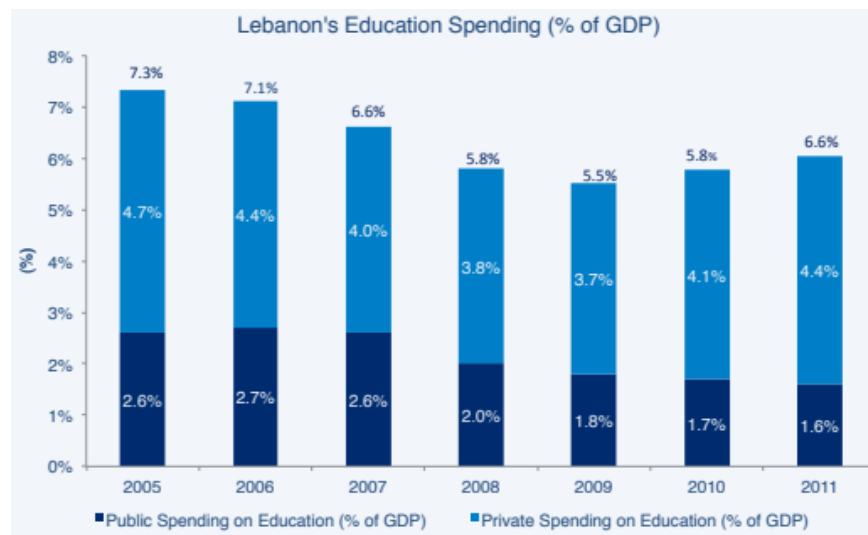


Figure 2.4: Education Sector and GDP (BankMed 2014)

In 1961, Lebanon had only six higher education institutions, including the prestigious American University in Beirut (AUB), ranking as second top Arab University and appearing on the top world ranking of universities (WES 2017). The Lebanese University (LU) which is the sole state university was founded in 1951, followed by AUB, formerly named as the Syrian Evangelical College, was founded in 1866, the University of Saint Joseph (USJ) in 1875, then Lebanese American University in 1948, and was known as Beirut University College, then Haigazian University, Beirut Arab University (BAU), which was formed further to a collaboration between Egypt and Lebanon. Today, Lebanon has more than 42 universities, described in Table 2.2 and Table 2.3, most of which were recognized and accredited since the 1990's.

The best of academic programs, PhD degrees, master's and undergraduate degrees are offered in these universities following international standards. The higher education sector, system, rights and freedom is well protected in the constitution, and run under the Directorate General for Higher Education in the Ministry of Education. In 2011, the total student body

was assumed to be around 195,000, half of them enrolled in the public university LU, followed by LIU and BAU (Table 2.2).

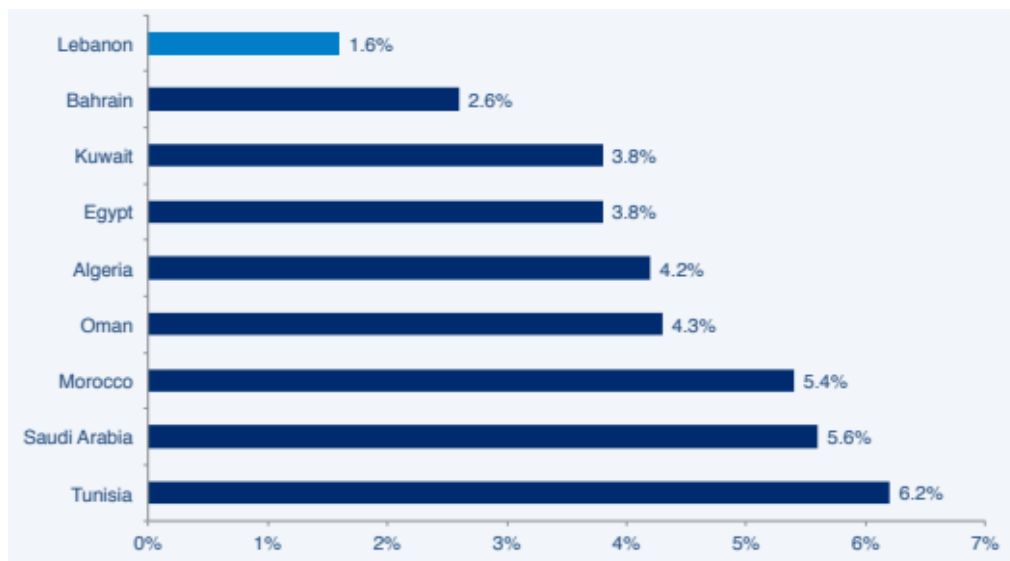


Figure 2.5: Education Expenditure as % of GDP in the Region (BankMed 2014)

Distribution of Higher Education Students by University (2012)		
	Total Students	% of Total
Lebanese University (LU)	73,698	38.3%
Lebanese International University (LIU)	16,721	8.7%
Beirut Arab University (BAU)	11,392	5.9%
Université Saint-Joseph (USJ)	9,362	4.9%
American University of Beirut (AUB)	7,826	4.1%
Université Saint-Esprit De Kaslik (USEK)	7,745	4.0%
Arts, Sciences and Technology University in Lebanon (AUI)	7,023	3.6%
Notre Dame University (NDU)	6,827	3.5%
Lebanese American University (LAU)	6,320	3.3%
American University of Science and Technology (AUST)	5,015	2.6%
University of Balamand	4,723	2.5%
American University of Culture and Education (AUCE)	4,425	2.3%
Others	31,445	16.3%
Total	192,522	

Table 2.2: Distribution of Higher Education Students

Type of Institution	Number of institutions
Public University	1
Private Universities (Licensed and operational)	35
Private University Institutes and colleges	9
Private University Institutes of Theology	3
Private Universities (Licensed but not operational)	3

Source: MEHE Website, 2016

Table 2.3: Distribution of Higher Education Institutions in Lebanon by Sector

2.7 E-Learner Readiness

2.7.1 Background

The substantial global advancements in ICT and the integration of internet-based applications into organization's business models and daily operations resulted "in the emergence of contemporary global economies driven by knowledge" (Chipembele and Bwalya 2016, p. 315). E-readiness appear as a critical success factor for the participation of organizations and markets in these global economies to exploit the multiple possible digital opportunities brought forth (Chipembele and Bwalya 2016; Lou and Goulding 2010), thus, e-readiness is grounded with success premises. In higher education, participating in the knowledge society to harness associated digital prospects lies in the capacity of HEIs to incorporate ICT "in their core mandate of teaching, learning, collaborative research and community development" (Chipembele and Bwalya 2016, p. 315). Universities are rapidly adjusting their business plans to adopt e-learning platforms to stay up-to date with advancements in technology and achieve their competitive edge. E-learning will reduce

over-dependence on resources, namely space and time, allowing for increased access to tertiary education, in line with global international efforts to spread education wider. Therefore, it could be argued that e-learning platforms, and subsequently online learning, has become an integral feature of HEI activity, that induce engagement and interaction between institutional management and their internal and external stakeholders. Expanding ICT infrastructure has a number of reported benefits, such as increasing transparency and accountability in budgeting and financial decision making, “revenue mobilization and expenditure through simplifying various university processes, student enrollment and provision of quality education” (2016, p. 316).

E-readiness is defined as the degree to which premium users are ready and prepared to apply their technological proficiency in an environment run by electronic learning systems (Akaslan and Law 2011; Gay 2016). Many international e-readiness assessment models, at the levels of nations and societies, are available, such as the United Nations Development Programme’s Technology Development Index, the Economist Intelligence Unit e-readiness index, World Economic Forum NRI, the UNCTAD Index ICT Diffusion, the UNPAN e-Readiness Index, etc. E-readiness has been extensively studied in different parts of the world, namely, in the Far East (Hung 2001; So and Swatman 2010; Siritongthawoern et al. 2006; Vate-U-Lan 2007), South Asia (Purnomo and Lee 2010; Kaur and Abbas 2004; Iqbal & Ahmad 2010; Iqbal 2013), MENA region (Abou Chedid and Eid 2004; Akhu-Zaheya et al. 2011; Darab and Montazer 2012), Africa (Addah 2012; Bediang et al. 2013; Ditimi and Ayanda 2013; Fuloronso et al. 2006; Ngampornchai and Adams 2016), North America (Alem et al. 2016; Gay 2016; Linos 2014; Wolrd Bank 2005) and Europe (Aydin and Tasci

2005; Lou and Goulding 2010). E-readiness is not restricted to students, faculty and education, rather could be expanded to communities e-learning readiness (Navidoo & Klopper 2005), business e-learning readiness in sectors such as health, agriculture, etc. (Gay 2016).

E-readiness has been measured using different dimensions and factors through e-readiness surveys, verified benchmarking, statistics and various forms of analyses (Hashim and Tasir 2014; Gay 2016). The aforementioned e-readiness indices and frameworks brings about difficulty to globally stipulate what e-readiness comprises (Chipembele and Bwalya 2016; Hassan and Fatimah 2014). Yet, results and findings derived from similar assessments appear to be of tremendous benefit. In order to ascertain e-readiness of HEIs, e-readiness assessment has to be undertaken (2016). Thus, this research evaluates e-readiness of core stakeholders, namely learners and instructors, using quantitative methods.

Investigating e-readiness of students and faculty is encouraged by the motive to understand the depth and breadth of the implications of the digital divide on a developing country like Lebanon, that would help in surfacing the challenges in adopting forms of online education from the perspective of learner and faculty skills and competencies. Although as indicated earlier there isn't one international definition on e-readiness, yet some features of what it entails are available (Hassan and Fatimah 2014), and draws upon the interaction between individuals, technology and processes and policies (Chimp 2016). Therefore, it could be argued, addressing e-readiness from the perspective of student, faculty, higher education institutions executive leaders, and ministry of education and higher education should provide

a comprehensive unambiguous analysis of the status of online education, the prospects and the challenges.

2.7.2 E-Learner Readiness Research

Learner e-readiness is defined as the level of development at which the student is ready to be enrolled in courses in online learning environment (Alem et al. 2016). The concept of e-learner readiness first emerged in 2000, with reference to adoption of electronic forms of communication using Internet, mobile phones, followed by the convergence of these communications via smart phones, smart PDAs, and their use in e-Government. E-Research, e-Education, etc. (Brown 2002; Information Technology Group 2000; Navido and Klopper 2005). Literature shows various definitions for e-learning readiness. For instance, Brown (2002), defined e-readiness as the level of development in which an individual is ready to learn using particular hardware. Whereas, Conley (2007) perceived e-readiness is the level of preparation a learner has reached that would enable him to take and achieve success in online courses in a higher education system without remedial courses. In the current research understudy the definition to readiness, will be the one associated to the authors and developers of the assessment tool (Alem et al. 2016). Learner e-readiness is defined as the level of development at which the student is ready to be enrolled in courses in online learning environment. The level of readiness is the particular attributes and characteristics of skills and orientation that the learner should possess, in the form of prerequisites, to take online courses. Two issues continue to capture the attention and interest of distance education leaders are online readiness of students and their satisfaction (Adkins

et al. 2011). Literature shows that online student readiness could be a predictor for satisfaction following taking online courses (Akridge et al. 2002), and accordingly studying the readiness of Lebanese students for online technologies, would be an evaluative study of the factors affecting successful implementation of e-learning systems, preventing failure of such systems. Also, if students are satisfied with their online learning, the chances are high that they would complete the program, inducing better retention rates. Accordingly, if online readiness is a predictor for satisfaction, it may imply that it can predict retention as well.

The importance of online technologies, presented through the increase in supply and demand, induced the need to examine the levels of mental and physical preparation of the users before enrolling in online programs, to maximize success (Hashim 2014). In that sense, studying e-readiness is mandatory to make sure the user is capable of adapting to online environments in best possible ways (Adkins et al. 2011; Hsiu-Mei and Liaw 2004). The e-readiness appears in different arenas, such as e-commerce, e-government and e-business (Alem et al. 2016). Technically, e-learning readiness is the “capability of prospect e-learning users in using a new learning environment as well as the usage of alternative technology” (2014, p. 1), which will be referred to as the working definition in this study. Yet despite its importance, literature seemed to ignore the level of preparation among users and rather focused on pedagogical features and technological aspects, and innovation. Some researchers even suggested that measuring students’ readiness through reliable tools, may help in forecasting success in online learning, and improve retention and attrition rates (Alem et al. 2016; Watkins et al. 2014).

2.7.3 Measuring E-Learner Readiness

Literature studies e-learner readiness in the context of readiness in an online medium of learning from different angles. Majority of studies focused on: (1) role of e-learner readiness on student satisfaction (Shraim and Khlaif Year; Ramazan and Yilmaz Year; Keramati et al. 2011); (2) developing scales to measure readiness (Alem et al. 2016; Doculan 2016); (3) the relationship between various demographic factors and e-learner readiness (Nasresh et al. 2016; Tunitirojanawong 2013); (4) the influence of e-learner attitude and readiness (Hgamponchai & adams 2016; Liaw et al. 2007); and (5) assessing e-learner readiness either as prerequisite for future implementation of online education in higher and general education levels, or during the transitional phase from traditional to online environment (Coopasami et al. 2017; Darab & Montazar 2010; Ngampornchai and Adams 2016; Rasouli et al. 2016; Tunitirojanawong 2013).

This research paper aims to assess e-readiness of Lebanese higher education student, as part of country's higher education system readiness to implement online education system. There are many models and subsequently factors in literature that are used to test learner readiness. However, they are all linked to a main concept, that students who are high achievers in online learning environments, possess some kind of academic preparation skills, such technical, attitudes, modes of learning, etc. that can steer success (Alem et al 2014; Morris et al. 2005). One of the common models is the 'SmarterMeasure Learning Readiness Indicator' (Adkins et al. 2011) that measures online readiness along different factors, namely, individual attributes, learning styles, life factors, reading rate and recall, technical competency, technical knowledge and typing rate and accuracy. The associated questionnaire is a 124-item assessment. Among the other models are Aydin and Tasci (2005), Chapnick (2000),

Psycharis (2005), Borotis and Poulymenakou (2004), etc. These models are of conceptual type as they specify categories and different facets, that could be utilized as a measuring scale for e-learning readiness. In his thesis dissertation, James-Springer (2016), provided a summary of the e-learning readiness tools that are based on the above conceptual models (Table 2.4).

Many studies are conducted to measure readiness of students for e-learning. Rasouli et al. (2016) assessed Iranian Art students' e-readiness through a self-developed survey, comprising communication and participatory skills, meta-cognitive skills, access levels, cognitive levels and self-direction skills. Results revealed moderate levels of readiness, across all competencies, where lowest levels appeared in students' skills in using computers and Internet with mean. Tuntirojanawong (2013) studied 162 graduate Thai students' e-readiness majoring in education and proved to be of ready status with highest means occurring in technology access, where study skills and technical skills had the lowest. In another study from Thailand, Ngampornchai and Adams (2016) explored student readiness and acceptance for e-learning using Unified theory of acceptance and use of technology, on self-regulation skills, computing devices ownership and familiarity with e-learning technologies. Moderate levels were reported in self-regulation skills. Coopasami et al. (2017) used modified Chapnick Readiness Score to measure e-readiness of Irish students through "psychological, equipment and technological" (p. 300) factors, showing

Aydin & Tasci (2005)	Chapnick (2000)	Borotis and Poulymenakou (2004)	Psycharis (2005)
1. Technology - Access - Learner skills and attitudes 2. Innovation - Barriers - Adoption - Openness 3. People - Employees - HR Specialists - E-learning champion - Vendors and external parties - Skills with respect to learning with technology 4. Self-Development - Budget - Time management - Belief in self-development	1. Psychological 2. Technical Readiness 3. Environmental 4. Human resources 5. Sociological 6. Economic 7. Financial 8. Equipment 9. Content	1. Business 2. Technology 3. Content 4. Training process 5. Culture 6. Human Resources 7. Financial	1. Resources - Technology - Financial - Human Resources 2. Education - Content - Educational 3. Environment - Entrepreneurial - Culture - Leadership

Table 2.4: Summary of E-Learner Readiness Models (James-Springer 2016)

adequate levels of readiness to “proceed with caution” category (p. 305). High readiness showed in psychological factors, while lower scores were reported in technological and equipment areas. Yilmaz (2017) used Yurdagul and Sarikaya (2013) e-readiness scales to investigate the relationship between e-readiness and student satisfaction and motivation among 236 undergraduate students in flipped classrooms, indicating high readiness. Shraim and Khalaf (2010) assessed Palestinian student readiness towards e-learning from an acceptance perspective, where results showed high readiness in terms of perceived usefulness, but yet they are reluctant to adopt. Low scores appeared in lack of exposure to e-learning technologies and their confidence in their technical skills to resolve difficulties,

in addition to their lack of commitment as they are easily distracted throughout online work up (Beidang 2013). In Cameroon, 30% of students lacked readiness in familiarity with functionality of online learning, while 17% lacked access to computers. Similarly, Akhu-Zaheya (2011) revealed that many of Jordanian students lacked access to personal computers.

2.7.4 E-Learning Readiness Questionnaire (ELR)

In this research, E-Learning Readiness (ELR) questionnaire, developed by Alem et al. (2016) will be used, Figure 2.6, where e-learning readiness is a multifaceted variable, consisting of 5 dimensions. The choice of scale is multifold, first, the design of the ELR questionnaire is based on the Social Cognitive Theory and Transactional Distance Theory which are consistent with the theoretical underpinnings of this research, and second, due to its popularity in literature, reported in the findings from a systematic review conducted by Alem et al. (2014). This research understudy identifies five e-learner readiness factors, namely: (i) self-competence, (ii) self-directed learning, (iii) motivation, (iv) financial and (v) usefulness (Figure 2.6).

Assessing higher education students in Lebanon on those 5 factors, would allow the researcher to understand the traits, attributes and skills among the students associated with online learning readiness. The results would inform whether the student body at higher education level is considered to be a good fit for online learning. At the operational level, weak results would indicate that the country should consider providing resources for

remediation and support, which would affect any strategic plan to be drafted for successfully implementing online education.

E-Learner Readiness
- Self-Competence - Self-Directed Learning - Motivation - Financial - Usefulness

Figure 2.6: E-Learner Readiness Scale

The aim is to reflect readiness among Lebanese higher education students to take online courses versus willingness to enroll in online class.

(i) Self-Competence

This factor shows student's ICT capacity to use computer tools and apply these skills in any technological environment. This factor reveals the ICT competences of a learner and the ability to apply these skills in a computer setting or using computer tool. Self-competence appeared in many resources in literature (Abdelraheem 2006; Erlich et al. 2005; Muse 2003), where some even described it as the best predictor for successful online learning experience (i.e. Alem et al. 2016; Chyung 2007; El Turk 2016). The personal anxiety with technology and lack of fundamental understanding of computer tools present as psychological barriers towards the acceptance, and in return the readiness to teach and in online education systems (El Turk 2016). Similarly, students have different preferences for learning styles, hence, some users have the tendency and inclination, due to high confidence levels in accomplishing tasks and requirements using the proposed technology (Gong et al. 2004).

(ii) Self-Directed Learning

Defined as a learning process, in which learning is perceived as a process that is based on planning, and require autonomy and self-regulation, in which the learner takes charge of his/her learning and monitor the academic progress (Alem et al. 2016). Grabau (2015), Yilmaz (2016) and Abdelraheem (2006) ascertain that the successful completion of online requirements of any course requires a certain degree of e-readiness, in terms of self-directed learning, self-efficacy, time management skills and set of other interpersonal skills. Similarly, Hao (2016) confirm that students should claim responsibility in gauging and reaching for online learning resources, in order to ensure effectiveness. Thus, it could be argued that self-directed learning as forms of being able to learn independently and self-disciplined appear to be relevant measure of e-readiness.

(iii) Motivation

In the context of the study and adopted questionnaire, motivation factor is referred to the psychological driver to learn and take online classes. Literature associates motivation to learning in general and particular links to learning in virtual environments (Grabau 2015; Hao 2016a; Turan 2015). This dimension is considered as a critical factor that affects learning, and sustaining the satisfaction of student in virtual environments, and proves to be another important factor of e-readiness (Alem et al. 2016; Unsal 2012; Yilmaz 2016). It assesses how motivated are the learners in taking online classes. Khan (2009). A number of research studies perceive motivation as a cognitive attribute that contributes to learner success, and researching the antecedents and outcomes is of great worth and value, as it directly relates to performance (Kaya 2002). Uysal and Kosemen (2012) ascertain that

motivation along with attitude and beliefs are among the predictors of self-efficacy that would in return influence and effect e-readiness of a student.

(iv) Financial

Enrolling in online courses in general, and seeking online degrees requires some financial power, thus, Alem et al. (2016) perceives finance as a critical factor for the success of completion rate and maintaining retention. For that reason, some leading universities provide financial guide, on how to borrow money, from whom, and how students can protect themselves not to drown under debts. They also provide what is commonly referred to by ‘online student loan’, or ‘Financial Aid for Online Colleges’, ‘Financial Aid for Online Education’, etc. A number of researchers highlight the importance of availability of financial resources for organizations, HEIs and students to successfully implement online education (Aydin and Tasci 2005; Borortis and Poulymenakou 2014; Chapnick 2000; Cooposami et al. 2017; Tello 2004). Chapnick (2000) in his theoretical e-readiness assessment model recommends that institutions should evaluate factors as financial readiness prior to adopting any e-learning system.

(v) Usefulness

Perceived usefulness refers to the derived benefits on productivity, effectiveness and efficiency in study and learning, in the eyes of the learner. A number of researchers (such as Erdogmus and Esen 2011; Iqbal and Bhatti 2015; Iqbal 2013; Subramanian 1994) positively correlated psychological technology readiness with perceived usefulness and ease of use of technology. Perceived usefulness appeared to be influencing the behavioral intention of

student to enroll in highly mediated technology environment, such as virtual classrooms and mobile learning. As a matter of fact, studies on the relationship between perceived usefulness and behavioral intention on using a new innovative technology system goes back to the 1980's with Davis (1989) through applying the Technology Acceptance Model (TAM). The system has to prove to be positively influencing productivity and performance in order to be well adopted by the user.

2.8 Faculty Readiness to Teach Online

The research question pertaining to this part is to assess levels of faculty readiness for online teaching and learning. Quantitatively, it aims to categorize faculty as either beginner, intermediate or advanced instructor, second, qualitatively it seeks to understand how close their instructional styles are from the recommended pedagogy for online teaching.

2.8.1 Background

Faculty readiness is an important factor in the success of an online program, as they are the connection between the administration and students, hence the major driving force to implement the institution's vision and mission. A number of researchers argue that the quality of e-learning systems offering is highly dependent on the technical infrastructure of an institution, however, the non-technical features is relatively dominated by the quality of faculty deliverables (Gay 2016; Hashim and Tahir 2014; Lloyd et al. 2014). Thus, faculty e-readiness becomes a critical factor in evaluating the effectiveness of online delivery.

But how do faculty perceive the usefulness of online education? How competent are they in using technological tools? How confident are they in managing course that is run over the web and how committed? How open are they towards integrating suitable pedagogical modules? How skilled are they in addressing issues like the ‘isolated learner’, or ‘passive learner’? What motivates faculty, etc.? These are just some of the questions that require answers at the institutional level to maximize chances of success in running online programs.

2.8.2 Faculty Readiness to Teach Online Research

Faculty members are the end users of any e-learning system and are the mediators between the learners and the administrator systems, therefore, to operationalize any implementation plan, faculty have to be encouraged to ‘buy-in’ online education (Chi 2015). Many definitions were brought forth to faculty readiness for online education. Hoppe, J. (2015) related readiness to willingness, where “faculty readiness for online learning simply suggests the willingness to prepare, effectively design, and facilitate courses within an online environment” (p. 5), emphasizing interest in knowledge and experiences to carry on online teaching. Phan and Dang (2017) used Borotis and Poulymenakou (2004) definition (in Phan and Dang 2017, p. 5) as the “mental and physical preparation” of faculty for online activities. This study defines faculty readiness as the technological, pedagogical and psychological readiness to teach online courses. Literature highlights a number of reasons that make faculty readiness of utmost importance, namely: tailoring and designing efficient training programs (Chi 2015; Kaur and Abbas 2004), contributing to the successful implementation of online learning programs (Rohayani et al. 2008), helping technically positioning

institutions in widely competitive markets (Penna and Stara 2008), and most importantly failure to assess faculty readiness for online education entails a risk in quality of online courses leading to isolated learners and dissatisfaction of students (Hoppe Jr. 2015; Phan and Dang 2017), which in return would impact retention and drop-out rates. Pallof and Pratt (2011) expressed the motive to teach online as many folds, the faculty may have been attracted to online teaching because of its convenience, engaging in collaboration with students at any hour in the day or night, others may choose online being as a latest trend and staying up to-date with advancements. In some countries such as the US, teaching online is an advantage to employable, where faculty are assigned tasks without being given a choice. Most research on online learning for teachers has focused on their use of e-learning in instruction, and readiness pertaining to acceptance, attitudes, skills, preferences and motivations (Hung 2016; Phan and Dang 2017). For instance, attitudes as measure of readiness was studied by Al-alak and Alnawas (2011) pertaining to adoption of online learning systems in Jordan; Alabdullaziz et al. (2010) explored students and faculty attitude towards online education; Schoonenboom (2014) reflected on Dutch faculty willingness and intention to use online teaching modes as part of their readiness. Results from these studies showed positive correlation between readiness/attitude and successful implementation in higher education sectors. Arbaugh (2010) and Hrtonovet al. (2015) further investigated the characteristics of faculty in relation to their attitudes and perceptions in the US and Czech Republic. Therefore, it is important to understand readiness of faculty to teach online, through examining underlying concepts (Hung et al. 2016; Phan and Dang 2017).

2.8.3 Measuring Faculty Readiness to Teach Online

At the global perspective faculty readiness suggest “the willingness to prepare, effectively design, and facilitate courses within an online environment” (Hoppe, Jr. 2015). It reflects attitude, knowledge levels and experience on delivering content online. Various assessments tools to measure faculty readiness are documented in literature. Among the most famous are the 30-item Faculty Self-Assessment Survey, developed Penn State University, that assess readiness along three main competencies: technical, administrative, pedagogical. Another tool is the SLN Online Teaching Survey, developed by State University of New York, for their internal users. A third tool is Illinois Online Learning Network.

Findings from earlier studies conducted in the region presented earlier in this section, direct towards an understanding on the lack of standardized tool that measures faculty e-readiness, oversimplification of some tools (Gay 2016), constraints on flexibility and applicability to different contexts particularly developing countries (Aydin and Tasci 2008). Given the aforementioned, it could be argued that there isn't one single interpretation of readiness, rather it differs based on institutional expectations and resources provided, and accordingly due to the sophisticated nature of e-learning there isn't one tool that fits all contexts and approaches (Clark 2007; Naresh et al. 2016).

2.8.4 Faculty Readiness to Teach Online Questionnaire

The current research understudy will adopt Pallof and Pratt's (2011) Assessment of Faculty Readiness to Teach Online scale, published in their book “The Excellent Online Instructor”. The scale measures readiness along four sub-dimensions, total of 35 items, namely:(i)

technical skills, (ii) experience with online teaching and learning, (iii) attitudes toward online learning, and (iv) time management and commitment, presented in Figure 2.7.

Faculty Readiness Scale	
1. Technical Skills:	12 items and 60 possible points
2. Experience with Online Teaching and Learning:	8 items and 40 possible points
3. Attitudes Towards Online Learning:	9 items and 45 possible points
4. Time Management:	6 items and 30 possible points

Figure 2.7: Faculty Readiness Scale

The importance of this tool is that it is appended by a criterion, Table 2.5, that would categorize faculty depending on achieved score, to as either beginner, intermediate or advanced, which has the capacity to induce objective and sound decision making. 175 total points are possible, score less than 90 would indicate beginner level, 90 – 150 score intermediate level and above 150 is advanced (2011; Chi 2015) (Table 2.5). One suggested claim by different researchers against Pallof and Pratt’s (2011) tool is that its assumption that faculty cognitive factors and competencies will influence willingness to teach, ignoring other facts such as faculty motivations (such as Boyd-Barett 2000; Chi 2013). As a matter of fact, literature presents a number of social cognitive factors that would either encourage or impede the choice of integrating technology into faculty instructional design (Dusick 2014). To overcome this difficulty, a short closed-ended question was added to the survey, asking the faculty to indicate the motives behind their preferences on whether accepting to teach online courses or not.

Score	Criteria
< 90 points	Beginner Level
90 – 150 points	Intermediate Level
> 150 points	Advanced Level

Table 2.5: Readiness Criterion

The significance of the findings further to analyzing the survey is two-fold: first at the national level, it would help in understudying the level of preparation among faculty for teaching online, despite all the complexity embedded in the structure, pedagogy and technology. Second, it gives the higher education institutions in Lebanon the chance to identify abilities, competencies, and attitudes towards teaching online. Gaining insights into these matters will contribute majorly to driving a successful online program.

The four factors related to faculty readiness to teach online, namely: (i) Technical Skills (ii) Experience with Online Teaching and Learning, (iii) Attitudes Toward Online Learning, and (iv) Time Management and Commitment, will be discussed below.

(i) Technical Skills

This component is based on the assumption that for any faculty to adopt online learning systems, they should have the technical knowledge, skills and competency of fundamental computer and Internet operations, consistent with e-learning systems. Faculty readiness would be assessed with respect to their familiarity with web searching, e-mail accounts, learning management systems and course management systems. There is a vast consensus across literature on the importance of technical readiness among faculty members, influencing online learning outcomes (Chi 2015; Gay 2016; Syodal et al. 2011).

(ii) Experience with Online Teaching and Learning

This component represents the pedagogical readiness of the faculty to teach online. It evaluates using instructor's experience in using features of online pedagogy, such as incorporating online quizzes, launching online discussions chat boxes, etc., whether in professional development or teaching. Importance of pedagogy readiness has been highlighted by many researchers (such as Akaslan and Law 2011; Gay 2016), influencing majorly self-motivation, acceptance of new technologies, and confidence in communicating with students effectively over the web.

(iii) Attitudes Toward Online Learning

This component takes into consideration the general faculty attitude and support for e-learning, as a critical predictor for readiness to run successful online classes. Woodrow (1991) further confirms that positive attitude towards technology is essential and required to bring success to any educational program that has element of technology. If negative predispositions and suspicions override instructor's perception on technology usage, then its utilization will be limited (Eslaminejad et al. 2010).

(iv) Time Management and Commitment

These are the life style readiness factors such as how organized faculty are, how responsive to student requests and emails, flexibility and follow up on due dates, their commitment to continuously and timely updating their online course material and content. A number of researchers highlighted the significance of an instructor having proper time management

skills, and other self-management habits that would predict readiness of an instructor to deliver online (Pillay et al. 2007; Gay 2013).

2.9 Acceptance of Online Education

This study starts with an assumption that any adoption and implementation of online learning that is not well accepted and embraced by end users, will present as potential waste of resources, opportunities and time (Farhat 2012; Cowen 2009). Acceptance will be significant in promoting success or failure of implementation plans. The concept of online education is relatively new in Lebanon, where so far only one program at the level of higher education has been legalized two years back, and hence, studying attributes and characteristics of users are of high interest. In that sense, this study seeks to reveal the acceptance of online learning, though willingness to engage in online teaching and learning, then perceived advantages and disadvantages of this mode of delivery. The move to online learning from technology-enhanced pedagogies and classroom is seen as evolutionary (Mehra and Omidian 2011), and any inquiry on implementation and maximizing potential benefits of web-instruction, has to involve attributes such as attitudes, perceptions, behavioral intention, and perceived benefits of students and faculty as central stakeholders. A number of models are available in literature on acceptance of advanced technologies, such as TAM, technology acceptance model, that is suggestive that user acceptance is a combination of perceived benefits of online education, technology ease of use (Keller 2013; Farhat 2012), then at a later stage evolved to include social norms, the perception of the user on influence of social norms on his/her attitude, determining behavioral intention of user (Keller 2013, Tarhini et al. 2013). Perceived

usefulness reflects the added benefit, the user's belief to what extent this mode of delivery would improve his/her performance, whether in studying as student or teaching as faculty. Perceived ease of use, is the degree to which the particular e-learning software is far from complication and requires minimal efforts. Many links have been derived, presented in Figure 2.8, where behavioral intention is assumed to be a dependent variable, influencing utilizing technology either positively or negatively, whereas perceived usefulness, ease of use and subjective norms are independent variables (Keller 2013; Farhat 2012). Research is suggestive that subjective norms, perceived ease of use, perceived usefulness determine behavioral intention, which in return affects behavior. Therefore, "The more people important to the user, e.g., teachers and other students, believe that it is appropriate to use the information system, the more likely the user is to accept and use the system" (Keller, 2013, p. 302). Another model is UTAUT, unified theory of acceptance and use of technology, that draws upon work of Rogers on Diffusion of Innovation and TAM (Figure 2.8), and assumes behavioral intention as a dependent variable, influenced by performance expectancy, effort expectancy, social influence and facilitating conditions (Keller 2013, Ngampornchai and Adams 2016). This research stems from a contextual social cognitive theory, hence, it will be used to guide investigation and acceptance of online education. Social cognitive theory revolves around user's 'computer self-efficacy', 'outcome expectations (performance)' and 'outcomes expectations (personal)'. Self-efficacy is defined as the perceived competency skill of the user, outcome expectations has two components, the first is performance related as to the increased efficiency and effectiveness

in completing tasks, while the second is personal outcomes related to the reward behind using the system. Perception of key users is well researched in literature.

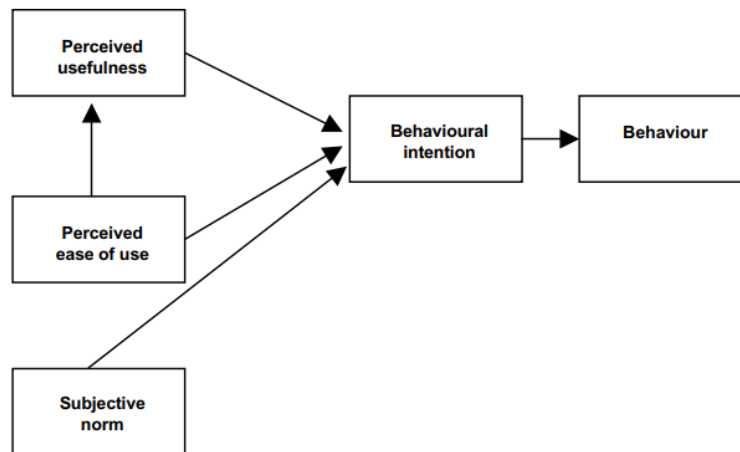


Figure 2.8: Technology Acceptance Model (Venkatesh and Davies, 2000 in Keller 2013)

Shraim and Khlaif (2010) studied attitudes of Palestinian students according to four measures: usefulness, computer self-efficacy, willingness and perceived challenges, resulting in positive attitude towards perceived usefulness but absence of willingness. Challenges were confined to technical difficulties, preference for synchronous modes, lack of familiarity and exposure to e-learning systems, and students are easily distracted. Ngampornchai and Adams' (2016) study in Thailand, showed that students have slight positive attitude towards e-learning, have extensive access and experience in using various technologies, but limited competency in collaborative e-learning tools, such as wikis, video chats, forums, etc. Low acceptance of online education among staff and students was indicated in Nigeria, with causes related to lack of awareness, lack of technical competencies and access to computers (Folorunso et al. 2006). Tarhini et al. (2016) extended the TAM to assess the possible influence of personal, social, behavioral and technological factors on acceptance of online education. And earlier in 2013, Tarhini et al. assessed used structural

equation modeling on Lebanese students' perceived usefulness, perceived ease of use, social norms and quality of work life to measure acceptance, and in return validating an extension of TAM. Results showed that e-learning is well accepted despite some challenges.

2.10 Status of Online Education in Lebanon Literature Review

The following part will address the status of online learning in Lebanon, through presenting a brief background first, followed by the status at higher education level, then finally a review of literature on the consolidated stakeholder perceptions, to derive challenges and prospects. It is aimed that the derives model, denoted by **Pre-Study Model**, will serve as a point of reference for empirical findings and outcomes of this research, where findings will be compared against the model and broader literature.

2.10.1 Background

Most of the Arab countries are amongst the poorest in the world, with radical and clear divide between rural and urban areas. The Arab educational systems have been subject to massive challenges, hindering progress and reforms. Among the known circumstances are, long political conflicts and intensive wars, particularly in Lebanon, Palestine, Iraq, Sudan, Algeria, etc. Then, the increased illiteracy, where about 900 million Arabs are illiterate, and another 130 million out of schools. Followed by, the high annual population growth with 2.5% by 2010 compared to global average of 1.2% and the concentration of public services in urban areas such telephone lines and internet, poor transport networks from road, rail and air making mobility harder. Accordingly, with an inadequate infrastructure, the Arab

educational system has to cater for the needs of 88 million current students and provide resources for another 29 million (Abdelraheem 2006). In 2000, ministers of education of all Arab countries met in Beirut, and convened establishing the Arab Open University in Beirut, that is based on advanced technologies and online education, however, yet to date, the ministry doesn't support and recognize online education. Adopting and implementing online education in Lebanon, is daunted by several barriers, that are categorized below based on the perception amongst different Lebanese stakeholders at high school and higher education levels.

2.10.2 Online Learning in Higher Education Institutions

Today, there are more than 30 public and private accredited universities in Lebanon, however,

none of them offer online degrees, given that ministry of education to date doesn't recognize nor accredit online education. Lebanon, as other neighboring GCC and non-GCC countries, was late to adopt Internet (Mirza & AbdulKareem 2011), and as a result late to adopt technology in education. Governments which initially resisted Internet and were late to make it readily available to their citizens, acknowledge the lost opportunities, and provided Internet only after controlling undesired sites (2011). Further to the providing of internet, other concerns then gradually surfaced such as low internet penetration, slow and poor quality of internet, and fear of immoral cues despite restrictions (Baytiyeh 2017). Lebanon Internet penetration rate is 75%, exceeding some Arab countries such as Egypt and other Middle Eastern counterparts (Internet Society 2016).

The government's disapproval towards recognizing online degrees translated into reluctance in adopting online education systems by higher education institutions in Lebanon, with profound forecasts of placing graduates at disadvantage in workplace in comparison to traditional degrees (Baytiyeh 2017; Dirani and Yoon 2009).

Few attempts by the Lebanese institutions marked efforts to try online education in their campus. AUB and LAU (Lebanese American University) offered trial courses, AOU offered some online degrees and diplomas, AUST (American University of Science and Technology) affiliated with American body to launch online education center, and finally the most significant attempts was the pioneering online post-graduate program offered jointly by AUB and LAU as follows:

- In 2007, AUB offered an online graduate design methodology trial course, MECH 978, through utilizing Moodle that has already been running on campus (AUB 2014).
- In 2013, LAU launched for the first time an online graduate elective course in computer science, Structural Bioinformatics, using videoconferencing (El Turk and Cherney 2016).
- In 2000, AOU received their accreditation for full fledge traditional degrees, however they partnered with Open University in London, in providing online degrees, accredited from UK but not from Lebanon.
- Lately and most importantly, in 2015, a joint/dual online postgraduate diploma in green energies was funded by the European Union Tempus Programme, and developed in partnership between AUB, LAU and AUC (American University in Cairo), with AUB holding leadership. Their credit system followed European

standards. This project is considered to be a pioneering fundamental attempt in accepting and embracing online education. Despite remaining unaccredited, negotiations are in place to give to equivalize some of these courses graduate credits that would be transferred into Lebanese graduate program. This report will be giving attention to documenting the experience of ProGreen Diploma, the lessons learned, the impeding barriers and strategies that were used to overcome.

- In 2004, the Cultural International Center, American based, opened a branch in Lebanon to offer online certificate programs in affiliation with AUST. It mainly targets students with busy life pattern that detains the chance to study and meet their educational goals, at the same maintaining quality.

2.10.3 Pre-Study Model on Reported Prospects and Barriers

There is a dearth of literature studying online education and e-learning in developed countries such as Europe and North America, and less in the MENA region. Lebanon in specific is under-researched (Tarhini et al. 2013). The available research papers addressing the Lebanese context has been consulted to derive the below review. The challenges reported in literature led to the formation of **Pre-Study Model** (Table 2.6) that could be summarized into; (1) technical difficulties, (2) financial difficulties, (3) attitudinal and pedagogical challenges, (4) social barriers, and (5) difficulties at leadership levels.

(i) Technical Difficulties

Many of the Arab countries are among the poorest in the world (Abdelraheem 2006), suffering from outrageous wars due to political instability, leading to poor infrastructure,

such as inadequate electricity (El Turk and Cherney 2016), inconsistent quality and access to Internet (El Turk and Cherney 2016; AbuChedid and Eid 2004), and general doubts among academicians in feasibility of implementation (Nasser and Chedid 2010). The overriding doubts in the current infrastructure of Lebanon, has led many students, faculty and high school teachers to have certain levels of predispositions that Lebanese HEIs lack e-learning management technical capacities.

(ii) Financial Difficulties

A number of financial challenges were also reported that present as an obstacle towards implementing online education. Nasser and AbuChedid's (2010) findings indicate that the high cost associated with training and investments in technology, resulted in lack of necessary trained staff that would guide piloting and running of online classes. Many of the Arab states have low GDP, while investment in the purchase of e-learning platforms and systems is costly, thus, the shortage of funds to integrate the necessary technology is a major obstacle (AbuChedid and Eid 2004; Baroud and Abouchedid 2010; Nasser and AbuChedid 2010; Tarhini et al. 2013). Moreover, the pricey Internet access (Abdelraheem 2006; AbuChedid and Eid 2004;) and low financial power of the citizens, brings about limited access to personal computer and Internet connections (AbuChedid and Eid 2004; Mirza and Abdelkareem 2011)

(iii) Social Barriers

The persistent troubles and conflicts that Lebanon, and some other parts of the MENA region, has suffered from, has affected the education system tremendously (Abdelraheem

2006), hindering their potentials, and delaying achievement of forecasted targets and sought learning objectives. Thus, limited access to education (Abdelraheem 2006; AbuChedid and Eid 2004) and high levels of illiteracy rates among Lebanese students (AbuChedid and Eid 2004).

(iv) Attitudinal and Pedagogical Barriers

The implementation of e-learning systems is hindered by another set of challenges that are presented through attitude and pedagogy of teaching academic staff in Lebanon. El Turk and Cherney (2016), reported findings that faculty perceive online teaching as increased workload that is beyond control. Resistance to teaching online appeared in many research studies (Baroud and Abouchedid 2010; El Turk and Cherney 2016; Nasser and Chedid 2010; Tarhini et al. 2013), that is either due to reluctance to teaching online courses not owned by faculty (El Turk and Cherney 2016), or general doubt in the perceived usefulness of online learning (El Turk and Cherney 2016; Mirza and Abdelkareem 2011; Nasser and Chedid 2010). Such negative attitude was partially also due to lack of awareness and familiarity with the emerging technologies of e-learning platforms and the pedagogical concepts associated with online learning (Nasser and Chedid 2010). Particularly, the shift from classical to new pedagogical models is not regarded as transitional rather abrupt, where neither faculty nor policymakers are aware with its learning outcomes, objectives and content (AbuChedid and Eid 2004). More findings from AbuChedid and Eid (2004) surface faculty's distrust in one another's ability in using advanced technologies in teaching as well as in building up teamwork spirit in the workplace. However, they agreed that caution is practiced upon administering any forms of online

testing, and there is statistical significant difference in opinion between different genders, and those who are either frequent or occasional users of Internet.

(v) Difficulties at Leadership Levels

The major contribution in pinpointing the administrative and strategic conditions impeding implementation could be found in AbuChedid and Eid (2004) work in addition to few other research studies. The reflected status could be summarized into poor strategies in widening access to technology in education institutions, fear among senior leaders that the new technologies will dominate resulting in a discourse with ‘no lecture’ institutions, and the lack of clear decisions and future strategies to implement e-learning among senior leaders such as university councils (AbuChedid and Eid 2004). Language also presents as a barrier, where the majority of content and application isn’t the official Arabic language, and the absence of online repositories in Arabic (AbuChedid and Eid 2004; Mirza and Abdelkareem 2011). On the other hand, barriers at the level of the national accreditation body conveyed that the lack of legitimate legislations (El Turk and Cherney 2016; AbuChedid and Eid 2004) that would recognize distance education has discouraged Lebanese students from enrolling in reputable international universities offering online degrees (AbuChedid and Eid 2004), and in return the promising work of AOU was obstructed. In an interview with the General Director of MEHE (El Amine 2016), these legislative barriers were linked to the lack of standards to govern quality in online education, indicating for support for Blended Learning over full fledge online degrees, limiting e-learning to 50% of any regular course.

Reported Barriers in Literature
Technical Difficulties

Inadequate electricity	El Turk and Cherney (2016)
Frequent technical difficulties such as inconsistent Internet access	El Turk and Cherney (2016)
Poor technology infrastructure	AbdelRaheem (2006)
Doubts in Feasibility of implementation	Nasser and Chedid (2010); El Turk and Cherney (2016);
Financial Difficulties	
High costs in training and investments	Nasser and AbuChedid (2010)
Lack of funding to integrate technology	AbuChedid and Eid (2004); Baroud and Abouchedid (2010); Nasser and AbuChedid (2010); Tarhini et al. (2013)
Pricey Internet access	Abdelraheem (2006); AbuChedid and Eid (2004)
Limited access to personal computers and internet connection	AbuChedid and Eid (2004); Mirza and Abdelkareem (2011)
Attitudinal and Pedagogical Difficulties	
Increased academic staff workload	El Turk and Cherney (2016)
Resistance to teaching online	El Turk and Cherney (2016); Baroud and Abouchedid (2010); Nasser and Chedid (2010); Tarhini et al. (2013)
Reluctance to teaching online courses not owned by faculty	El Turk and Cherney (2016)
Negative attitude among academicians on worth of value of online learning	Nasser and Chedid (2010); Mirza and Abdelkareem (2011)
General doubt in the perceived usefulness	Nasser and Chedid (2010)
Lack of familiarity with distance education	Nasser and Chedid (2010)
Abrupt shift towards new pedagogical models where faculty are not familiarized with its content, objectives and learning outcomes.	AbuChedid and Eid (2004)
Caution over administering online exams	AbuChedid and Eid (2004)
Lack of faculty trust in one another's ability in using advanced technologies in teaching as well as in building up teamwork spirit in the workplace	AbuChedid and Eid (2004)
Social Barriers	
Literacy	AbuChedid and Eid (2004)
Access of education to social issues and immoral cues	Abdelraheem (2006); AbuChedid and Eid (2004)

Difficulties at Leadership Levels	
Poor strategies in widening access to technology in education institutions, hence widening digital gap between Lebanon and rest of the world	AbuChedid and Eid (2004)
Lack of e-learning management capacities	AbuChedid and Eid (2004)
The work of AOU was obstructed due to lack of legislative policies on accreditation and recognition	AbuChedid and Eid (2004)
Policies discouraged Lebanese students from enrolling in distance education programs offered by universities in Europe, Australia and North America.	AbuChedid and Eid (2004)
At its best, introduction of e-learning in educational institutions was limited to the mere use of Blackboard and Moodle	AbuChedid and Eid (2004)
Lack of Arabic content and applications, for non-bilinguals	AbuChedid and Eid (2004); Mirza and Abdelkareem (2011)
Implementation of e-learning programmes in educational institutions may result in abrupt change in content and pedagogy of teaching, with educational decision-makers can't accommodate due to the near absence of plans for smooth transition from traditional to modern.	Abu Chedid and Eid (2004)
Fear from deliberate academic discourse that might take place, and universities will become 'no lecture' institutions.	AbuChedid and Eid (2004)
Lack of decisive actions to implement e-learning among the highest academic decision-making bodies such as university councils.	AbuChedid and Eid (2004)
Lack of decision due to the lack of familiarity and techniques methods among deans and chairpersons/ managing and administrating online registration	AbuChedid and Eid (2004)
Lack of regularity policies that facilitate the use of e-learning and training in education institutions.	AbuChedid and Eid (2004); El Turk and Cherney (2016)

Lack of standards and indicators for quality assurance	El Amine (2016)
Support for blended learning rather than online education.	El Amine 2016
Blended learning can't exceed 50%	El Amine (2016)
Prospects in Literature	
Teachers are neutral in their opinion towards online education	Nasser and Abu Chedid (2010)
Teachers willingness to invest in efforts in distance program and support it	Nasser and Abu Chedid (2010)
Teachers belief that distance education program would benefit them	Nasser and Abu Chedid (2010)
There is uncertainty regarding implementation of distance learning in school because of vert unfamiliarity with distance programs	Nasser and Abu Chedid (2010)
Online education is capable of: increasing revenues, increasing enrollments, expanding educational offerings to non-traditional populations, potentially improving retention, alleviating space constraints, solving commuting distance and time issues, reducing overall costs, and improving student learning outcomes.	El Turk and Cherney (2016); Haidar (2014)
Online education is well accepted among students in Lebanon despite mentioned problems	Tarhini et al. (2013)
Perceived usefulness (PU), perceived ease of use (PEU), social norms (SN) and Quality of Work life (QWL) to be significant determinants of students' behavioral intention (BI)	Tarhini et al. (2013)
Faculty favorable attitudes towards engaging in full fledge online degree and education	Abouchedid and Eid (2004)
Online education should be a mechanism for enabling Arabs to gain better access to higher education in a region that suffers from poverty, wars, illiteracy and economic dissolution.	Abouchedid and Eid (2004)

Faculty recognition of e-learning as an effective tool for meeting a globally challenging and exponentially growth information economy	Abouchedid and Eid (2004); Haidar (2014)
Among the 42 private government institutions, the majority of conclusions suggested that Lebanon requires an online learning institution	Sahyoun (2004)

Table 2.6: Pre-Study Model

2.11 The Relationship between Study Variables

This study aims to validate a number of hypotheses that will elaborate more on the nature of the relationship between the study variables readiness, willingness, acceptance and independent variable demography. These associations will help in better understanding the characteristics of the Lebanese students and faculty pertaining to online education.

H1: There is relation of statistical significance between *E-Learner Readiness* and *Willingness*.

Ngampornchai and Adams (2016) findings on college students in Thailand showed moderate to strong positive correlations between willingness to pursue online degrees and performance expectancy, effort expectancy, attitude, image, social influence and compatibility. Many of these factors are part of the online learner readiness scale, hence it is expected, that readiness to be a significant contributor in willingness.

H2: There is a relation of statistical significance between *E-learner Readiness* and its components.

This study hypothesizes that Alem et al. (2016) model on online learner readiness is applicable to the Lebanese context, and the readiness components significantly explain willingness results.

H3a: There is relation of statistical significance between *Age* and *Readiness*

Agius (2014) study on Maltese higher education students yield no significant relationship between age and any factor of e-readiness as a global variable. Therefore, age is not expected to be a significant contributor in readiness variance.

H3b: There is relation of statistical significance between *Gender* and *Readiness*

Hung et al. (2010) showed that there is no difference in the means between the two groups, and both genders have similar readiness levels for online environments.

H3c: There is relation of statistical significance between *Marital Status* and *Readiness*

A number of research studies suggested studying the influence of student marital status on readiness for online education, such as Lau (2008) in an article titled “Effects of Personal Characteristics on Online Learner Readiness”. Similarly, Wladis and Hachey (2016) demonstrated the benefits of assessing the influence of marital/cohabitation status and other demographical variables on online learner readiness of students at higher educational level.

H3d: There is relation of statistical significance between *Educational Background* and *Readiness*

The studied educational background of the students varied between undergraduate and

postgraduate. Artino and Stephens' (2009) study found no statistical differences in the means between the undergraduate and graduate groups in many components related to readiness levels.

Similarly, Park and Choi (2009) showed that learners' educational background had little influence on factors related to readiness and attitudes towards online education.

H3e: There is relation of statistical significance between *Enrolling University* and *Readiness*

Azimi's (2013) study in the US, showed that there were no significant differences in the readiness of students coming from different government and private-funded universities in readiness to online learning. Therefore, it is expected that the study wouldn't find significant differences among the two groups.

H4: There is relation of statistical significance between *Faculty E-Readiness* and *Willingness*

Multiple regression analysis in Casdorph's (2014) study showed that performance expectancy, effort expectancy, social influence, and motivation orientation to teach online, significantly predicted behavioral intention and acceptance to teach online. Many of these factors are part of the faculty e-readiness scale, hence, it is expected that faculty e-readiness to be a significant contributor to willingness.

H5: There is a relation of statistical significance between *Faculty E-Readiness* and its components.

It is expected that Pallof and Pratt (2011) suggested factors of e-learning readiness to be applicable on the Lebanese context.

H6a: There is relation of statistical significance between *Gender* and *Readiness*

Similarly, the multiple regression analysis in Casdorph (2014) study showed that gender played significant role in explaining the results of performance expectancy, effort expectancy, social influence, and motivation orientation to teach online, which also significantly predict behavioral intent to teach online. Therefore, it is expected that gender would explain some of the variances in readiness results.

H6b: There is relation of statistical significance between *Age* and *Readiness*

Many research studies have indicated a significant negative correlation between age and years of experience of the academic staff versus ease of use of technology and readiness for online teaching. In his study on 600 instructors, Teo (2014) showed that age and years of teaching appeared to be a significant negative contributor in readiness.

2.12 Summary

This chapter covered a number of significant topic, namely, the working definitions, theoretical framework, evolution of the concept online education and its functionality, facts and figures on online education, higher education sector in Lebanon, e-learner readiness literature review, faculty readiness literature review, acceptance of online education, the

status of online education in Lebanon that would lead to Pre-Study Model, and finally the relationship between the study variables.

The next section discusses the methodology and research design in details.

3 Research Methodology

3.1 Overview of Chapter

The following section on research approach discusses in detail the philosophical underpinnings governing the current research understudy, research design, mixed method, multiple case study approach, survey questionnaires, interviews, data analysis techniques, delimitation, ethical considerations, trustworthiness of findings and conclusion.

3.2 Philosophical Underpinnings

The current research understudy advocates the use of mixed-methods design of research, where “the use of both methods provides a more complete understanding of research problems than does the use of either approach alone” (Fraenkel et al. 2015, p. 555). Literature has witnessed remarkable calls for mixed-methods research in response to the notable unproductive debates pondering the pros and cons of quantitative versus qualitative methods, leading to paradigm “wars” (Gage 1989 in Cohen et al. 2011; Creswell and Plano Clark 2007). The unproductive reality of ‘paradigm wars’ has induced a number of pleas for replacing quantitative and qualitative methodologies by ‘confirmatory’ and ‘exploratory’ research designs, namely Onwuegbuzie and Leech (2005) (in Cohen et al. 2011).

This research study supports the line of research advocating for less confrontation between different research paradigms (Gorard and Smith 2006; Cohen et al. 2011), better convergence rather than dichotomy (Creswell 2013) and greater dialogues between the proponents of qualitative and quantitative research methods (Cohen et al. 2011). The current mixed-methods understudy will be conceptualized from a Pragmatic philosophical standpoint and employ the mixed-methods research design. Coupled with mixed-methods

research design, Pragmatism is universally accepted as the most common alternative to the forced dichotomy between (Post) Positivist approaches and Constructivism (Brewer and Hunter 1989; Cohen et al. 2011; Denzin 2008; Teddie and Tashakkori 2009; Fraenkel et al. 2015), freeing the researcher from a number of corporal and conceptual constraints. In this way, it is regarded as an alternative paradigm, offering philosophical stances consistent with both single and multiple realities subject to empirical inquiry and practicality in solving problems (Creswell 2013; Creswell and Plano Clark 2007; Fraenkel et al. 2015).

3.3 Research Design

This study is mainly a collective case study research (hereby shall be referred to as Macro Case Study), where cases (shall be referred to as Micro Case Study) were selectively chosen serving instrumental inquiry type purposes, and each case would add to our understanding on the feasibility of adopting online education. It supports the Pragmatist predisposition that “multiple paradigms could be utilized” (p. 557), advocating the assumption that Postpositivism and Social Constructivism ought to be complementary rather than distinctive, offering holistic and complete understanding of studied phenomenon. As Fraenkel et al. (2015) remarks, “the use of both methods provides a complete understanding of research problems than does the use of single approach alone” (p. 555). Through investigating a range of attributes pertaining to different groups of stakeholders quantitatively and qualitatively, the aim is to reach some generalizations (Stake 1995) on the readiness for online education findings and then emphasize on interpretation to thoroughly understand acceptance and attitude of key stakeholders. Thus, a comprehensive stakeholder analysis

would have formulated bringing up an unambiguous picture on the current status of online education in Lebanon, and how close it is close to facilitate legalizing and accrediting web instruction by concerned authorities.

Four instrumental case studies, denoted by **Study 1, Study 2, Study 3 and Study 4** are presented where sampling was of “typical” (p. 5) nature representing students, faculty, institutional academic leaders, and academic decision makers. Two of the cases employ mixed methods research approach, Figure 3.1, whilst the other two are phenomenological qualitative.



Figure 3.1: Research Approach

The selection of the cases is driven by the adopted e-learning theoretical framework, and it was granted that the four selected cases would provide ultimate understanding to the three main pillars of the framework, namely people, technology and services.

Research design involved three main stages, presented in Figure 3.2, that led to developing final study model on the prospects and barriers towards adoption of online learning, followed by offering solutions to impeding challenges, and recommendations for strategic

implementation of e-learning systems. Investigation started with **Stage 1** that focused on document analysis, aiming at reviewing extensive literature in the field of online education in Lebanon, categorized under prospects and barriers, and denoted by **Pre-Study Model**. It aimed to set the stage for foundational understanding on the current state of online education in Lebanon, pertaining to evolution of attitudes, achievements, competencies, documented strengths and weaknesses, etc. This model served as a point of reference for the empirical research that took place to understand earlier studies in the field, the nature of findings, the dominating trends in opportunities and threats. Derived findings from current research were discussed in comparison to data from Pre-Study Model to either attest results, interpret discrepancies and derive ‘valuable contributions’ which are significant findings reached and confirmed by international literature but would have emerged for the first time in Lebanon.

Stage 2 followed and included extensive scrutinizing of collected data, where each of studies of the instrumental cases Study 1, 2, 3 and 4 were analyzed separately. **Mixed method research** methodology was employed in **Study 1 and Study 2**, whereas **qualitative phenomenological research** characterized **Study 3 and Study 4**. **Stage 2** resulted in consolidating findings based on the adopted e-learning system framework, to generate a comprehensive model on key findings in terms of prospects and barriers. **Stage 3**, empirical findings were used to offer solutions to derived barriers and generate a strategic implementation plan, based on collected data.

Employed approaches involved document analysis, multiple case study, mixed-methods and qualitative analysis.

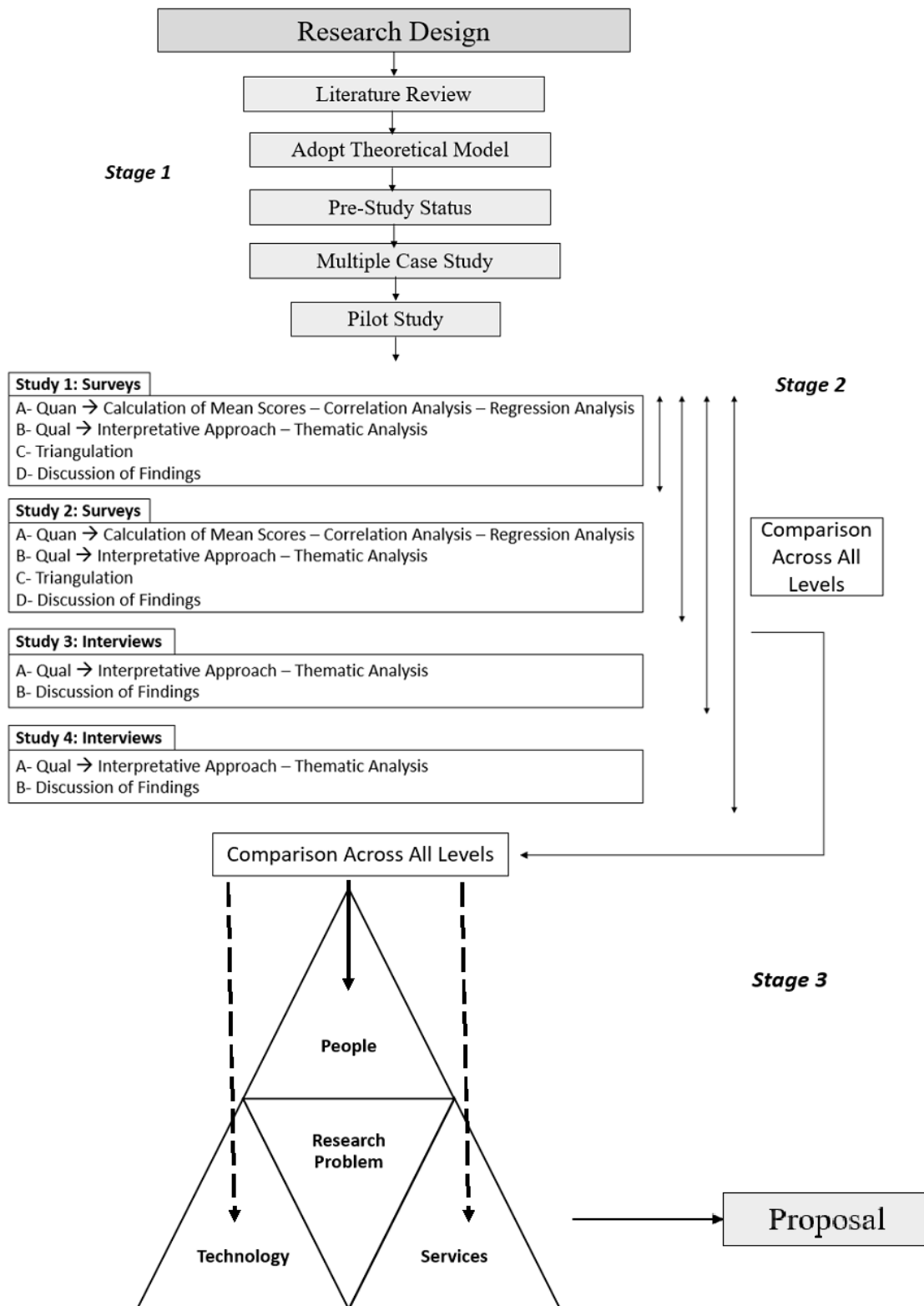


Figure 3.2: Research Design

3.4 Multiple Case Study Approach

Research suggests that evaluating the operational status of online education systematically and empirically, a multi-faceted form of analysis is needed to unravel the influence of multiple of factors on individual parameter of acceptance of online education (Wu et al. 2010). On the other hand, a different line of research in literature claims that, despite their importance, such macro-level studies often ignore the major role played by culture and context and the way they reflect on practices (Skoltis and Graybeal 2007). Therefore, through focusing on individual groups, taking the form of a case study, the researcher will overcome the challenge purported by the multi-faceted approach seeking micro-level of analysis to derive detailed and deep outcomes. At this level, “case study is expected to catch the complexity” (Stake 2005 p. xi) of the operational situations of online learning in Lebanon, the prospects and challenges. Four cases were built, namely, Study 1, 2, 3 and 4. Findings from each model will be triangulated with pre-study model and broader literature to confirm the validity of the findings.

Study 1 aimed at examining readiness levels of **students** for online education, along with exploration of their willingness to pursue online degrees and perception on advantages and disadvantages. It would answer the following research questions:

- **Research Question: What are the prospects and barriers in the e- readiness level among higher education students in Lebanon and perception towards online learning?**
 - What is the level of e-readiness among students to enroll in online classes?
 - What are the factors affecting e-readiness of the Lebanese student?

- Is there a relationship of statistical significance between student e-readiness and willingness to learn online?
- Is there a relationship of statistical significance between student e-readiness variable and its components?
- Is there a relationship of statistical significance between student various demographic variables and e-readiness?
- How could the acceptance of online education among Lebanese students be described?

Readiness was first assessed quantitatively through circulating online surveys, then data on willingness and perception were collected from short questions on the survey. Willingness was measured through closed-ended question, while perception through open-ended question. These questions were mandatory in the circulated online survey as it would help in elaborating on many of obtained quantitative findings, digging deep in the attitude of students towards such emerging pedagogies and technologies to uncover factors that might have been overlooked. The responses were analyzed qualitatively through descriptive and inferential statistics, and by the end of survey data would have been collected on: readiness, willingness and perception. The researcher aims to integrate findings from quantitative and qualitative parts, then triangulate with findings from pre-study model and international literature, on prospects and barriers from student side. Particular attention was given to investigating student attitudes, through first residing on a survey that is not too long (16 questions), yet highly reliable and serves the main purpose of readiness, so it was highly likely that responses would be of good quality and worth. Second, perception wasn't

approached quantitatively (through additional scale questions on the survey) rather qualitatively (in the form of short questions) to allow for different factors pertaining to acceptance of online education to emerge freely, given how new the concept is to the Middle East and Lebanon.

Study 2 assessed **faculty** readiness to teach online, pedagogical practices, willingness to teach, and perception towards online education. The design followed similar structure as to Study 1, where readiness was first examined through scale questions on a questionnaire, followed by ‘check box’ questions borrowed from the adopted e-learning theoretical framework by Aparicio et al. (2011), then closed-ended question in willingness, then open-ended question on perception. The special characteristic about the adopted survey is that it is presented with a criteria that aims to categorize faculty in terms of readiness to teach as being either beginner requiring ample of support and training, intermediate with some help needed, and advanced with minimal training required. The scale questions were analyzed quantitatively, similarly the check box questions, where perception question qualitatively. This study would answer the following research questions:

- **Research Question: What is the e- readiness level among faculty members in Lebanon and perception towards online teaching?**
 - What is the level of e-readiness to teach online among faculty?
 - Is there a relationship of statistical significance between faculty e-readiness and willingness to teach online?
 - Is there a relationship of statistical significance between faculty e-readiness variable and its components?

- Is there a relationship of statistical significance between student various demographic and e-readiness?
- How could the faculty acceptance of online education be described?
- How compatible are the current adopted pedagogies with online education?

Mixed-methods “triangulation” research design (Fraenkel et al. 2015), in Figure 3.3, was employed in **Study 1 and Study 2** where quantitative data and qualitative data were treated equally.

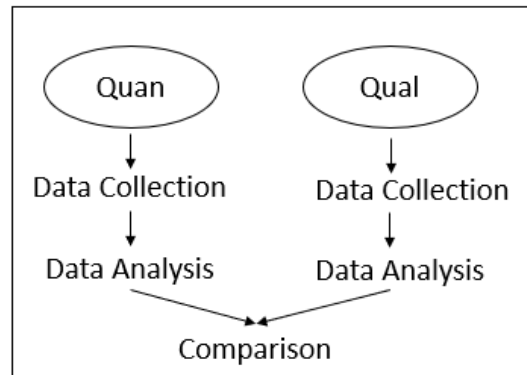


Figure 3.3: Mixed Method Design

Study 3 and Study 4 had different methodological frameworks than Study 1 and 2 that utilized mixed-methods, rather are situated within the interpretive paradigm, where the main aim is to contextualize and understand senior executives’ perception in the institutional opportunities and barriers towards online education. A qualitative case study approach of inquiry was adopted, as based on Creswell (2006, p. 73) “it involves the study of an issue explored through one or more cases within a bounded system (i.e. a setting, a context)”. It aimed to explore the perceptions of institutional executives on the prospects and barriers towards adopting online education. Data was collected through interviews with senior

leaders who are decision makers in their fields. Leaders covered the biggest five universities in the nation, in an attempt understand how serious they are in implementing e-learning, demonstrated through their strategical planning, technology infrastructure and capacity. Moreover, executives form the ProGreen Diploma were also interviewed to better understand their concerns, the implementation process and lessons learned. This diploma is by far considered as the most advanced form of online education that has been implemented at the level of higher education, and the plans are in place to turn it into Micro-Masters.

- **Research Question: What is the perception of key higher education institution's senior stakeholder in Lebanon towards adopting online education?**

Study 4, similar to Study 3, seek to explore the perception of legislative authorities on the possibility of adopting online education, reasons behind lack of accreditation, political and strategical concerns and opportunities. Accordingly, most senior executives were interviewed, who are on ground the academic decision makers in higher education sector un Lebanon for long, aiming to answer the below research question:

- **Research Question: What is the perception of main legislative academic decision makers in Lebanon towards adopting online education?**

3.4.1 Comparative Approach

Multiple case studies had gained increased recognition in social sciences management research (Bryman and Bell 2011) that are mostly grounded with comparative design approach. It allows the researcher to unravel the complexity of each case (Stake 1995),

compare findings from each case, looking for commonalities and uniqueness across cases, then finally engage in discussion and reflection of findings (Bryman and Bell 2011).

The first two studies followed mixed method methodologies studying readiness and acceptance of online education by students and faculty, whereas the third and fourth were qualitative revealing the perspectives of senior academic leaders and Ministry of Education in Lebanon. Analysis and interpretation of individual studies aimed to make sense and meaning out of each (Stake 1995), then comparative technique using Venn Diagrams was employed to compare findings and generate solid understanding of the studied phenomenon.

3.5 Data Collection

The main tool used for data collection, included questionnaires and individual interview protocols developed for this study. The protocols aimed to better understand the perspectives of the subjects pertaining to strategic planning, policies, systems, practices, challenges and opportunities for the provision of adopting and implementing online learning systems in Lebanon. Data collection included a number of sources, mainly, (i) questionnaires circulated to students and faculty, (ii) interviews with senior executives from private and public institutions, leaders/managers of ProGreen Diploma, and representatives from MEHE, (iii) documented institutional frameworks, strategies and pilot studies, and (iv) local and broader online research studies and journals. Thorough review of research conducted on the Lebanese online education stakeholders took place to explore the documented challenges and opportunities prior to data collection.

3.6 Questionnaire A

Structured questionnaires were developed to function as a quantitative descriptive instrument to measure first (Questionnaire A) readiness of students, willingness of students to enroll in online degrees, and unravel their perception qualitatively on advantages and disadvantages of web instruction. The adopted survey questions were designed in a comprehensive manner, so that even if the respondents were not familiar with the study topic, they could participate in the study. The main reason for the selection of this instrument was that it was theoretically applicable to the context and purpose of the study. Such relevance aided the researcher to answer research questions examined in the research.

Questionnaire A has first a consent form on the cover page that illustrates the purpose of the research study, and the means in which privacy and confidentiality of responder and collected data are protected. The questionnaire has three main sections as follows:

Section 1: This section covered the demographical data and contained seven questions on: age, gender, marital status, educational background, type of enrolling university, CGPA and nationality.

Section 2: This section measured the variable e-learner readiness as a multi-dimensional facet consisting of 5 factors, comprising 17 scale items as follows. The first factor is *Self-Competence*, measured through 3 items, the second is *Perceived Usefulness*, measured through another 3 items, the third is *Self-Directed Learning*, including 5 items, the fourth is *Motivation*, made up from 3 items, and the fifth is *Financial* comprising 3 items.

Section 3: The last section required the student to answer two short questions, the first was a categorical closed-ended question on their readiness to pursue online degree, and second an open-ended question where students, require respondents to reflect on their answer in a comment box.

It is to be noted however, that a small box is left open for the respondent to leave their e-mail address/phone number if they are interested in being interviewed, either to follow up on some of their interesting/ambiguous answers and to be sued for further paper beyond the scope of this research.

3.6.1 Likert Scale

Likert scale, developed by Liker (1932) is a “a psychometric response scale primarily used in questionnaires to obtain participant’s preferences or degree of agreement with a statement or set of statements” (Bertram ,p. 1). Responses are measurable and subject to mathematical and statistical testing and analysis. Likert scale is the most widely used form of scale (Cooper & Schindler 2008; Blumberg et al. 2008), as they don’t require the participant to take a concrete yes or no stance against a certain phenomenon but allows them to respond to a certain level of agreement and variation. They are efficient and affordable means for data collection, that could be distributed either electronically and manually. In this research study, participants were asked to indicate their level of agreement with a set of statements on an ordinal scale of: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 3 = Agree, and 5 = Strongly Agree.

3.6.2 Close-Ended Question

Lavrakas (2008) defines close-ended questions as those that provide responders with fixed number of choices to select an answer, made up from stem question and a set of response choices. These questions are usually very clear and straight forward, to be read the way they are expected to be read, with mutually exhaustive answer alternatives, that can't overlap. Questions aimed to assess willingness of the student to engage in online education degree, and the reason behind their choice, with possible answers of Yes, No and Unsure. These types of questions have their advantages and disadvantages as well. First, they provide the simple count that is easy to be interpreted and is assumed to be necessary at this stage, as online learning is still at the early foundational stages, findings its way through many obstacles that are of different natures. Hence, it is important to understand students' heart. Disadvantages lie in the information that it provides as limited and the researcher can't further explore or give meaning to the indicated response. However, to overcome this obstacle, a follow-up open-ended question is posed next for the responder to clarify his choice of answer. In that sense the researcher would have perpetuated the suggested disadvantages, and responses would be analyzed qualitatively, enriching data.

3.6.3 Open-Ended Questions

These questions would allow the respondent to type in their answers into a comment box, to be viewed and interpreted individually through qualitative modes of analysis. Students were asked to reflect on their perceived advantages and disadvantages of online education that would explain many of the yield answers from quantitative part and demonstrate their

acceptance of online learning. They are significant in offering feedback from the student using their own words, that would help to unravel personal perceptions, predispositions, and any possible overlooked opportunities. The students were asked to identify the advantages and disadvantages of online education.

3.6.4 Piloting

According to Blumberg et al. (2008) the data gathering stage of the research process better begins with pilot testing. The aim of conducting a pilot study in this research is to pre-test the survey questionnaire designed through the procedure described above. The survey questionnaires were distributed to 10 students at one private and another public university in Lebanon, and the faculty questionnaire was sent to 5 faculty who are expertise in the field of education and online learning. Valuable feedback was gathered from completed surveys and reflections, with comments regarding content and wording. Participants were informed that they were participating in a pilot study, and also that the information provided by them would not be included in the research analysis, but rather help to inform the final version of the survey. Eventually, the questionnaires were revised, and necessary editing took place.

3.6.6 Distribution Protocol

After finalizing the survey, a number of steps were taken as follows:

- 1- Selected universities were contacted for the purpose of data collection. Approvals were granted, and surveys were circulated through concerned departments.
- 2- Online data was protected with security passcodes.

3.6.7 Population and Sampling

The research took place in two big cities in Lebanon, during Fall 2017/2018 semester, where the interest was in universities, Figure 3.4, that appeared to be advanced in implementing elements of e-learning in their campus according to review of literature, intermediate, and pre-early beginners. Accordingly, 5 universities are selected, 4 of which are private, and the fifth is a branch of the only public university in Lebanon, with size of enrollment in U1 is 7,826 students, U2: 1,300, U3: 5,015, U4: 6,827, U5: 1,500. To assess student readiness, U1, U3 and U5 were selected among the five universities, representing high e-learning capacity, average and low. The population was students enrolled in these three universities, on part-time or full-time basis, in undergraduate and/or postgraduate programs. Subject participation was voluntary and far from awarding financial incentives. Total of 305 valid responses were obtained, while the response rate can't be formed, as the surveys were sent out electronically. The selected field for research is considered to be a "typical site" (Glesne 2011, p. 44) rather than "exemplary" (p. 44), where Stake (1995) ascertains that the most important criterion would be to optimize learning, "which cases are likely to lead us to understanding, to assertions, perhaps to even to modifying of generalizations?" (p. 5). The process of site selection is far from "backyard research" (Glesne 2011, p. 43), where the researcher doesn't belong to covered institutions, and rather has been residing in a different neighboring country where online education is approved and accredited for more than four years by the time the study was conducted. Conducting the study in a "foreign culture" (p. 41) has a number of advantages, however the most important factor would be entering the field with openness for all sorts of new understandings, perceptions, and modes of behavior. Hence, reflecting

an objective assessment of the observations, with lesser chances of readily made assumptions that would alter the reality. Students and faculty from three universities participated in this research (U1, U3 and U5), presented in Figure 3.4, whereas senior executives of the five universities (U1, U2, U3, U4 and U5) along with Ministry of Education and Higher Education were selected to participate.

To assess student readiness, U1, U3 and U5 were selected among the five universities, representing high e-learning capacity, average and low. The target sample was users of e-learning systems in Lebanese higher education sector, on part-time or full-time basis, enrolled in undergraduate and/or postgraduate programs. Subject participation was voluntary and far from awarding financial incentives. Total of 305 valid responses were obtained, while the response rate can't be formed, as the surveys were sent out electronically. Tarhini et al. (2013) further confirms that majority of empirical research on e-readiness and technology acceptance "has used a non-probability convenience sampling technique as it enables the researcher to collect data from the participants based on their availability" (Tarhini 2013, p. 56).

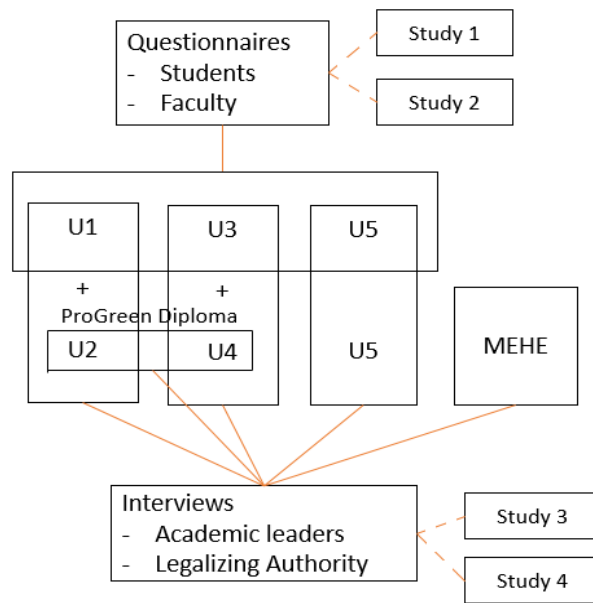


Figure 3.4: Subject Selection

3.7 Questionnaire B

The second questionnaire (Questionnaire B) measures faculty readiness, willingness to teach online, then reveal the nature of their pedagogical practices and their perception on online learning. Similarly, to first questionnaire, the questions were designed in an easy and understandable way, to maximize participation. The reason for selection of particular adopted instrument was the applicability of its theoretical underpinning to the context and purpose of the study. The questionnaire has first a consent form on the cover page that illustrates the purpose of the research study, and the means in which privacy and confidentiality of responder and collected data are protected. The questionnaire consisted of four sections.

Section 1: This section covered the demographical data and contained 8 questions on: rank, age, gender, teaching experience, online teaching experience, educational background, job status and nationality.

Section 2: This section measured the variable faculty e-readiness as a multi-dimensional facet composed of 4 factors and 35 scale items in total as follows. The first factor is *Technical Skills* measured through 12 items, the second is *Experience with Online Teaching and Learning* made up of 8 items, the third is *Attitudes Towards Online Learning* measured over 9 items and the last is *Time Management and Commitment* composed of 6 items.

Section 3: The third section aimed at assessing the pedagogical practices of faculty to understand how compatible they are with online modes of teaching and learning, through four multiple choice questions that were designed based on the adopted e-learning framework by Aparicio et al. (2016). The respondent may choose more than one option.

Section 4: The last section required the student to answer a closed-ended question Yes/No/Unsure on their readiness to teach online, and to reflect on their choice through an open-ended question in a comment box.

Like earlier questionnaire, a small box is left open towards the end for the respondent to leave their e-mail address/phone number if they are interested in being interviewed, either to follow up on some of their interesting/ambiguous answers and to be used for further paper beyond the scope of this research.

3.7.1 Likert Scale

Likert scale, developed by Likert (1932) is a “a psychometric response scale primarily used in questionnaires to obtain participant’s preferences or degree of agreement with a statement or set of statements” (Bertram 2011, p. 1). Responses are measurable and subject to mathematical and statistical testing and analysis. Likert scale is the most widely used form

of scale (Cooper & Schindler 2008; Blumberg et al. 2008), as they don't require the participant to take a concrete yes or no stance against a certain phenomenon but allows them to respond to a certain level of agreement and variation. They are efficient and affordable means for data collection, that could be distributed either electronically and manually. In this research study, participants were asked to indicate their level of agreement with a set of statements on an ordinal scale of: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, and 5 = Strongly Agree.

3.7.2 Multiple Choice Questions

Multiple select multiple choice questions were asked based on Aparicio et al. (2016) that would prompt the respondent to choose one or more answers from a list of options. Special care was given to the way question is asked and terminologies are used, as piloting of the questionnaire showed the need to further illustrate some of the used terms to optimize findings. Four questions were asked, the first on adopted instructional practices with 9 possibilities, the second on dominating educational model in faculty instruction with 7 choices, the third on the use of learning technologies with 7 choices, and the last is on utilized communicative online tools with 6 possibilities. The last choice in each question would be 'other' allowing the faculty the chance to provide their own answer in case of any inconvenience.

3.7.3 Close-Ended Question

In a similar manner to the close-ended question in Questionnaire A, described in 3.6.2, the

faculty was asked to indicate his/her willingness to teach online classes. The aim was to obtain a simple and brief answer on intentions for counting purposes, with possible answers of Yes, No and Unsure. Close-ended questions have their pros and cons, where main pros lie in being easily interpreted and is assumed to be necessary at this stage, to obtain general understanding on intentions of faculty. Disadvantages lie in limited information passing across and therefore, follow-up open-ended question is posed next for the responder to clarify his choice of answer. In that sense the researcher would have perpetuated the suggested disadvantages, and responses would be analyzed qualitatively, enriching collected data.

3.7.4 Open-Ended Questions

These questions would allow the respondent to type in their answers into a comment box, to be viewed and interpreted individually through qualitative modes of analysis. Students were asked to reflect on their perceived advantages and disadvantages of online education that would explain many of the yield answers from quantitative part and demonstrate their acceptance of online learning. They are significant in offering feedback form the student using their own words, that would help to unravel personal perceptions, perceptions, predispositions, and any possible overlooked opportunities. Similarly, from faculty side, the questions would help the researcher to better understand faculty perceptions, negativity and opportunities.

3.7.5 Population and Sampling

The population was faculty from three universities participated in this research (U1, U3 and U5), presented in Figure 3.4, representing high e-learning capacity, average and low, with total faculty body of 1100, 800 and 1200 respectively. Subject participation was voluntary and far from awarding financial incentives. Total of 94 valid responses were received. Tarhini et al. (2013) confirms that majority of empirical research on e-readiness and technology acceptance “has used a non-probability convenience sampling technique as it enables the researcher to collect data from the participants based on their availability” (p. 56).

3.8 Data Analysis

To analyze quantitative data, descriptive statistics using SPSS v.20 was used to derive the demography of respondents, then run factor analysis and reliability tests to verify validity and reliability of the adopted model and questionnaire.

Descriptive statistics through quantitative percentages and means were utilized to analyze data collected via questionnaire, at the factors and item levels, then represent them graphically. Multiple inferential statistical analysis tests were used to test relationships and validate hypotheses, that would also be further extended in a research paper beyond the scope of this dissertation. Analysis of short questions followed the interpretative procedure, that would be shown in details in below part, using thematic analysis to derive codes and themes

falling under key themes prospects and barriers. Themes are ordered according to their importance and abundance of occurrence.

Accordingly, **Study 1** would comprise quantitative and qualitative analysis of data collected on **students**, followed by discussion of findings that would triangulate different sources of data in the light of literature. Special attention would be given in comparing derived findings against earlier literature on Lebanese context, and analysis would lead to Study 1 Model on prospects and barriers pertaining to student readiness and attitude.

Within similar framework to Study 1, **Study 2** on **faculty** readiness, attitude and pedagogy followed similar design, would lead to the formation of Study 2 Model on prospects and barriers pertaining to faculty.

3.9 Interviews

Interviewing is a main technique used in qualitative research data collection (Merriam 2009) and is necessary whenever the studied topic couldn't be observed such as behavior, emotions or personal interpretation of the world (Percy et al. 2015) and can't be measured statistically. Kvale and Brinkmann (2009) indicate that interviews are best used to understand phenomena "from the subjects' points of view" (p. 1), to unfold the meaning of their perceptions, to uncover their attitude. The researcher aims to reveal through interviews what's "in and on someone else's mind" (2009, p. 88). Accordingly, interviews of the "Conceptual Type" (Kvale and Brinkmann 2009, p. 153), face-to-face and semi-structured were chosen to be the main research instrument in data collection, revealing the perceptions of academic

executives and decision makers on the possible institutional barriers that would impede adoption of online learning, and opportunities that could be built on.

3.9.1 Semi-Structured Interviews

Fifteen interviews were conducted, each lasting between 40 - 60 minutes, taking place in the interviewees' working offices. Two sets of interview guides were developed, those addressing executives employed by institutions with clear records on engagement in online education and technology advancements, and those universities that are totally novice. Accordingly, the questions are of explorative, semi-structured and open-ended nature, where questions are "flexibly worded" (Merriam 2009, p. 90) but at the same time "specific information is desired from all the respondents, in which case there" (2009, p. 90). The questions are guided by findings of pre-study model and international literature of similar studies taking place in different countries across the world. The researcher followed Merriam (2009, p. 89) guidelines on the amount of structure desired in the interviews, where:

- Interview guide includes a mix of more and less structured interview questions
- All questions are used flexibly
- Usually specific data required from all respondents
- Largest part of interview guided by list of questions or issues to be explored
- No predetermined writing or order

Setting up the interviews followed the work of Kvale and Brinkmann (2009), on the criteria for quality interview, started with coding the interviewee's name according to their initials, e.g. BE for Edgard Bennet, then, each interview was introduced by briefing the subject on

the purpose of the research study and the main research questions. The interviewees were then asked to carefully read the informed consent form regarding their voluntary participation, confidentiality, anonymity and the right to withdraw at any time. The interviews were audio-recorded, ended with a de-briefing overview to ensure the accuracy of the presented information and then transcribed.

3.9.2 Open-Ended Questions

Unlike quantitative research studies, AbdelMajid et al. (2017) confirm that the researcher is the primary instrument for data gathering and “interview questions are at the heart of interviewing” (p. 1074). The interview guide comprised 17 questions, that are mostly of the open and end type, where the main advantage lies in allowing for more interpretation than what the research anticipates (Cohen and Manion 1989). The questions focused on the interviewee experience with online education, personal perception of advantages and disadvantages, personal reflection of the current status of online education in their institutions and Lebanon, rationale for offering online learning, and their stance pertaining Ministry decision on bans and the lessons learned from the blended learning models. Finally, each interviewee was asked for suggestions for implementation of online education in Lebanon that would help the researcher in generating a proposal on adoption and systematic implementation of online education in the country. Probe and follow up questions were used to maximize gaining of valuable data, from people who are considered as senior and decision makers in their field.

3.9.3 Piloting

Interviews in qualitative research study provide rich and thorough understanding of subjects' perspectives and interpretations of social phenomenon (Abdel Majid et al. 2017), and to seeks insights of those who have experienced phenomenon first hand. Therefore, piloting of an interview before implementation is a key feature to ensure quality conduction of interviews, it tests the questions and give preliminary overview of possible improvisation. Piloting interviews can help in pinpointing flaws and limitations and the necessary modifications that should take place. Accordingly, interview guides and protocols could be strengthened (Kvale and Brinkman 2007). Prior to commencing, the interview guide was shared with colleagues in the field of education, and engaged in some online learning, while it was tested on one faculty who is not part of interviewing stage. Comments on increasing clarity of questions were received and modification took place.

3.9.4 Population and Sampling

Subject selection for the qualitative interviews followed "typical case sampling" (Glesne 2011), those who are most qualified to present an accurate picture on the seriousness of institutions in adopting online education, how far have they progressed, the presence of specialized teams to take over online learning, etc. Fifteen executives participated in the study, where 4 are from U1, 2 from U2, 3 from U3, 2 from U4, 2 from U5, and 2 from the MEHE. Ten subjects hold PhD degrees, among which 5 are full professors, the other 5 are associate professors, and 5 are Masters holders. Nine subjects are senior executives serving as General Director of MEHE, President, deans, and senior leaders of e-learning taskforce,

who are decision makers in their institutions and directly affecting any decision around implementing online learning, while the remaining are less senior, chairs of large departments and managers. Four of the interviewees are senior leaders in the ProGreen Diploma as well, hence, responding to questions regarding employing university and ProGreen Diploma.

3.10 Data Analysis

Individual stakeholder cases were analyzed separately, resulting in analysis procedure conducted along four levels, Figure 3.5:

Level 1: Quan – Qual; Level 2: Quan – Qual; Level 3: Qual – Qual; Level 4: Comparison

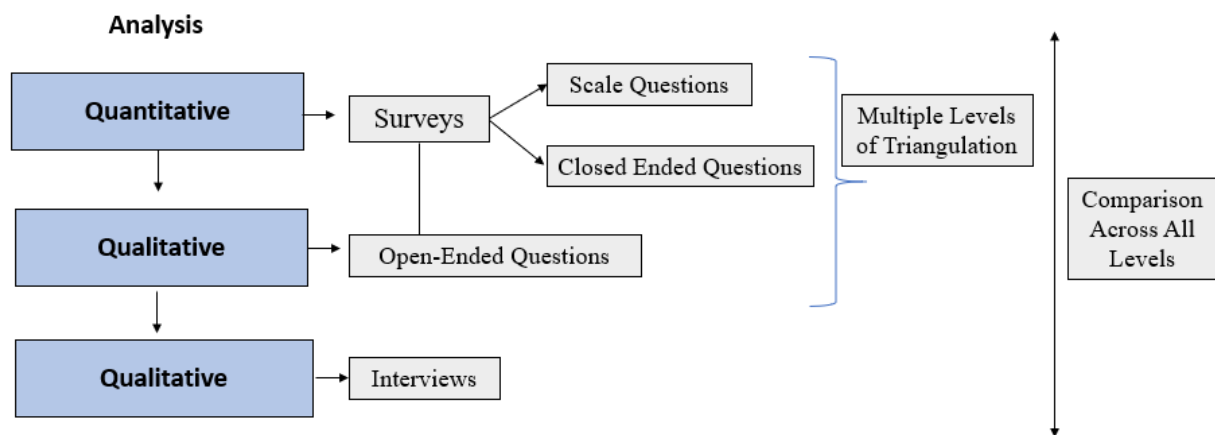


Figure 3.5: Data Analysis Framework

Level 1 and Level 2

Analysis started quantitatively, where the aim was to establish a foundational stage on the readiness and willingness levels of online education by students and faculty. As the assumption was if students and faculty lack general e-readiness, and of particular interest for

faculty was pedagogical readiness, then any adoption or implementation talk would be too risky, jeopardizing any potential adoption and implementation plan to failure, before being conceived. The researcher here argues that a critical component for any adoption and implementation plan is knowing the end-users' needs, namely learners and instructors, as every individual comes to the online education world with a different set of skills and expectations, that might not all the time be compatible with the required competencies. This point is further confirmed by Dolan (2009), denoting by "know your learners' needs" (p. 91), to understand students' access to computers and level of knowledge. And that's why a common practice in offering online courses, is to conduct a pre-course survey to assess student's individual competencies, so that support plans could be drafted and services are well aligned with needs. Therefore, quantitative measures of readiness and willingness to be engaged in online education was fundamental. Several statistical tests were conducted to analyze collected data, that is later described in detail in 3.7.1.

Qualitative part would follow where it would unravel the perception of students, their fears, their concerns, perceived benefits, expectations, preferences, etc. Along similar manner, the goal was to have the personal reflection and perception of faculty emerge around the way they perceive online teaching, advantages, disadvantages, etc.

Level 3: Qual – Qual

This qualitative stage of analysis would address academic leaders first then academic decision makers next, at this stage macrolevels of analysis will aim to bring about the institutional context of online education, the efforts at the level of educational institutions to embrace online education, and whether it is strategic or left for online education to prove

itself and find its way in Lebanese higher education sector. This all would help in bringing up the themes pertaining to the prospects and barriers on online education and will eventually forge a new unambiguous status of the current trends in online learning at the level of higher education in Lebanon. Therefore, results would be derived from micro and macro forms of analysis.

Qualitatively, several techniques were used to qualitatively analyze the open-ended questions within the survey. Responses would help in revealing the willingness and acceptance of students in Lebanon for online education, at the same their perception on the added value of taking online classes, versus the disadvantages. Associated factors would bring about the prospects and barriers in adoption and implementation of online education, from the students' side. Triangulation then took place by combining analyzed data from the quantitative and qualitative part, then compare them against literature. Particular attention was given to the Pre-Study Model, as it reflects results of research studies that took place in Lebanon. Qualitatively, several techniques were employed to analyze data gathered from semi-structured interviews. The interview guide was designed based on adopted theoretical framework and extensive literature review (Pre-Study Model). These techniques helped in surfacing the interpretation of academic decision makers in Lebanon on the importance of online learning for a small country like Lebanon, its feasibility, the social influence on acceptance, factors affecting the slow pace in its progress, the current efforts forth by some institutions to advance the progress, and suggestions for implementations.

Level 4

Triangulation of data was conducted several as follows:

In Study 1, to integrate findings from quantitative part, qualitative part and literature review.

In Study 2, to integrate several findings from quantitative part, then triangulate them with qualitative part and literature review.

Findings from Study 2 were compared against Study 1 to derive commonalities and highlight possible discrepancies, then findings from Study 3 would be compared against results from Study 2 + Study 1, then finally findings from Study 4 would be compared against results from Study 3 + Study 2 + Study 1, Figure 3.6. Findings were then represented in the form of the adopted theoretical framework, Aparicio et al. (2016). Comparison across all levels served the purpose to present better interpretation of the current situation and derived findings, bringing about the prospects and barriers in adoption and implementation

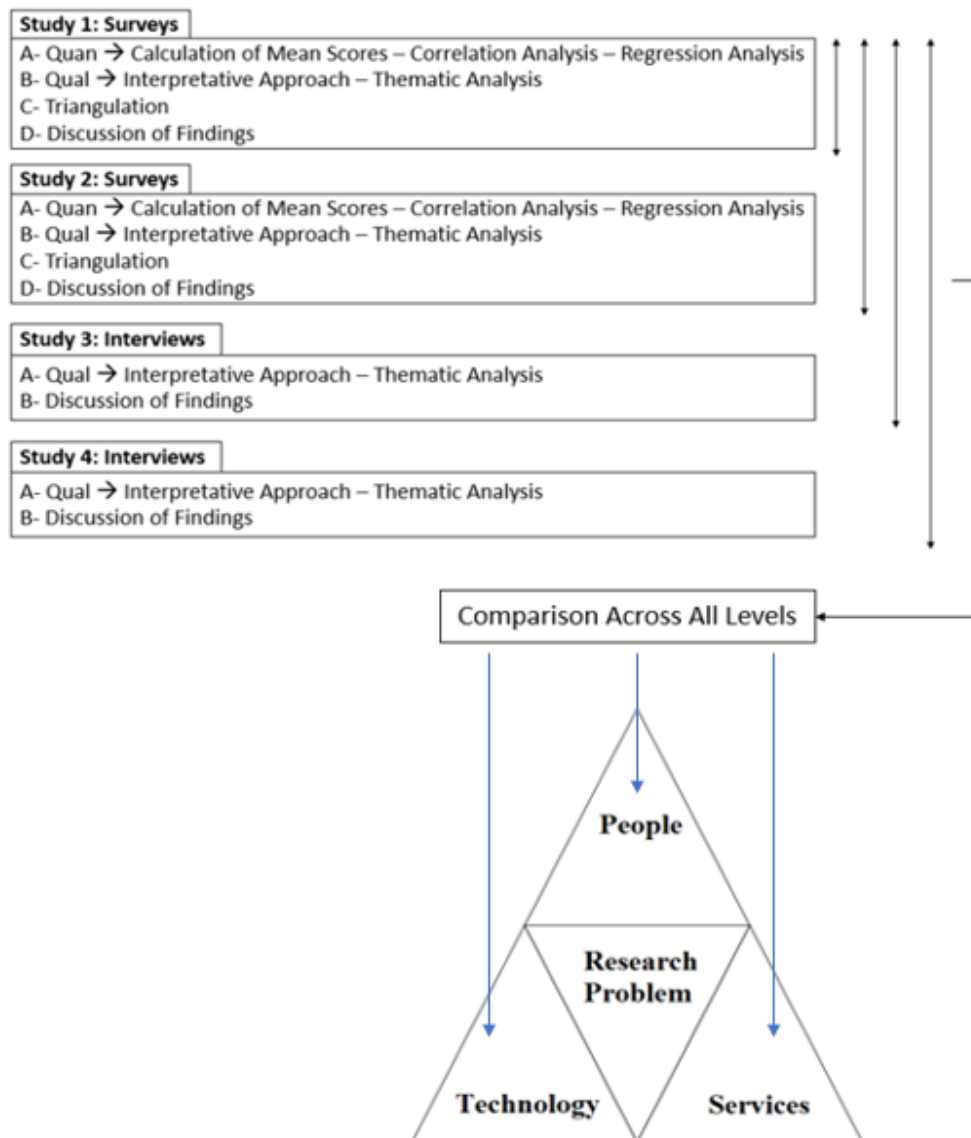


Figure 3.6: Comparison Technique

3.10.1 Quantitative Data Analysis

This part presents an overview on the techniques that were utilized to analyze data from the survey. It will majorly discuss the way data was first displayed and organized, then the statistical analysis tools and tests used to derive results. Namely, frequency distributions,

correlation and regression analysis. SPSS v. 22 was used to analyze quantitative data statistically.

Data Entry and Formatting

Surveys were designed and distributed electronically, where all responses would be recorded online and extracted to Excel Sheet. The researcher would then copy the Excel Sheets content into SPSS software, that saved time and insured accuracy of entered data.

Descriptive Statistics and Derived Scores

Descriptive statistics are efficient in summarizing large sets of quantitative data. Two types of scoring were utilized, mean scores and standard deviation, and row scores, each serving a certain purpose. Mean is the measure of central tendency which is the average of corresponding scores (Field 2009, p. 22). Mean scores and Standard Deviation were calculated for each individual item, category and variable, to assess readiness of participants against measured components of variables in Questionnaires A and B. Mean scores on each item were reported, along with means scores of categories and total mean score of variables. These scores were compared against a well-known Aydin and Tasci's (2011), Figure 3.7, assessment model on the expected level of an individual readiness for e-learning systems, which is identified as mean score of 3.40. Mean scores above 3.4 are considered to be meeting expected average readiness, whereas below indicates lack of readiness, and significantly below, scores less than 2.6, means significant lack of readiness and requiring fundamental intervention.

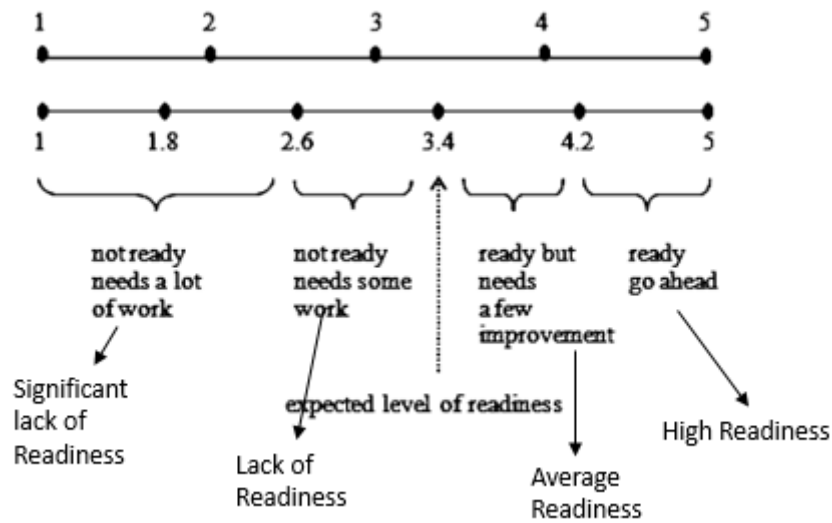


Figure 3.7: Faculty Mean Scores Criterion (Adapted from Aydin and Tasci's 2011)

For instance, the mean scores on Questionnaire B were distributed as follows, Table 3.1:

Corresponding Score	Level of Readiness	Corresponding Items
Between 1 and 2.6	Not ready, needs a lot of work	Items 13, 14, 15, 17, 18 and 19 (+ <i>Total Experience Online</i>)
Between 2.6 and 3.4	Not ready, needs some work	Items 8, 9, 16, 20, 21, 22, 30 and 31
Between 3.4 and 4.2	Ready, but needs few improvement	Items 2, 11, 12, 24, 25, 26, 27, 28, 32, 33 and 35 (+ <i>Total Attitudes</i> + <i>Total Time Management and Commitment</i>)
Between 4.2 and 5.0	Ready, go ahead	Items 1, 3, 4, 5, 6, 7, 10, 23 and 29 (+ <i>Total Technical</i>)

Table 3.1: Mean Scores of Items on Questionnaire B

Another type of calculated scores were the derived scores, that can be “obtained by taking row scores and converting them into more useful scores on some type of standardized basis” (Fraenkel et al. 2015, p. 189). Row scores are “the initial scores obtained” (p. 189) by adding total scores on each scale for each individual faculty respondent, then comparing them against a criterion developed by Pallof and Pratt's (2011) to assess faculty readiness to teach

online, published in their book “*The Excellent Online Instructor*”. Results would allow the researcher to understand how well the respondent performed, i.e. assess the level of readiness of the faculty and the amount of help required to achieve adequate proficiency.

The total possible scores on each category of the 35-item Faculty E-Readiness Scale is as follows, Figure 3.8:

Faculty Readiness Scale
1. Technical Skills:12 items and 60 possible points
2. Experience with Online Teaching and Learning: 8 items and 40 possible points
3. Attitudes Towards Online Learning: 9 items and 45 possible points
4. Time Management: 6 items and 30 possible points

Figure 3.8: Faculty Readiness Scoring

Pallof and Pratt (2011) ascertains that the “total scores are an indicator of the phase of development in which the instructor finds himself or herself, allowing for the creation of an individualized training plan to meet the needs at that phase”. The criteria for scoring is adopted from Pallof and Pratt (2011) as follows:

150 – 175 points = The faculty member is well suited to teaching online courses and the chances are high that the respondent is an expertise in online instruction.

90 – 15 points = The faculty member will most probably be needing some support to achieve success in teaching online courses and chances are high that the respondent appreciates online instructor.

Below 90 points = The faculty need considerable training and support for success in teaching online and are probably a visitor or novice online instructor.

Findings on faculty readiness levels took the below shape in Table 3.2, as a sample:

Score	Criteria	Frequency (N = 94)	Percentage
< 90 points	Beginner Level	3	3%
90 – 150 points	Intermediate Level	85	90%
> 150 points	Advanced Level	6	7%

Table 3.2: Faculty Readiness to Teach Online Results

The topic of online education is completely new in Lebanon, therefore, acquiring information on readiness levels among students and faculty for online learning and teaching is extremely important, as it reveals the competency levels and needs of a significant group of interest for e-learning software, which is the end users, students and faculty.

Graphical Representation

Another way of studying descriptive statistics is to go beyond how often scores have occurred is to the distribution of scores, and therefore, demographic findings and results from scale items were represented in Pie Charts and Frequency Distribution Tables. Frequency distributions were automatically computed and displayed through the adopted software for designing questionnaires and collecting responses. These representations allowed for better understanding of data through observing the spread and dispersion of data, and they were particular helpful for the researcher whenever unexpected findings, compared to literature, emerge, switching back and forth to these graphs would at many times provide

explanation for resulting discrepancies. A sample of demographical data on Questionnaire A representation is displayed below in Figure 3.9:

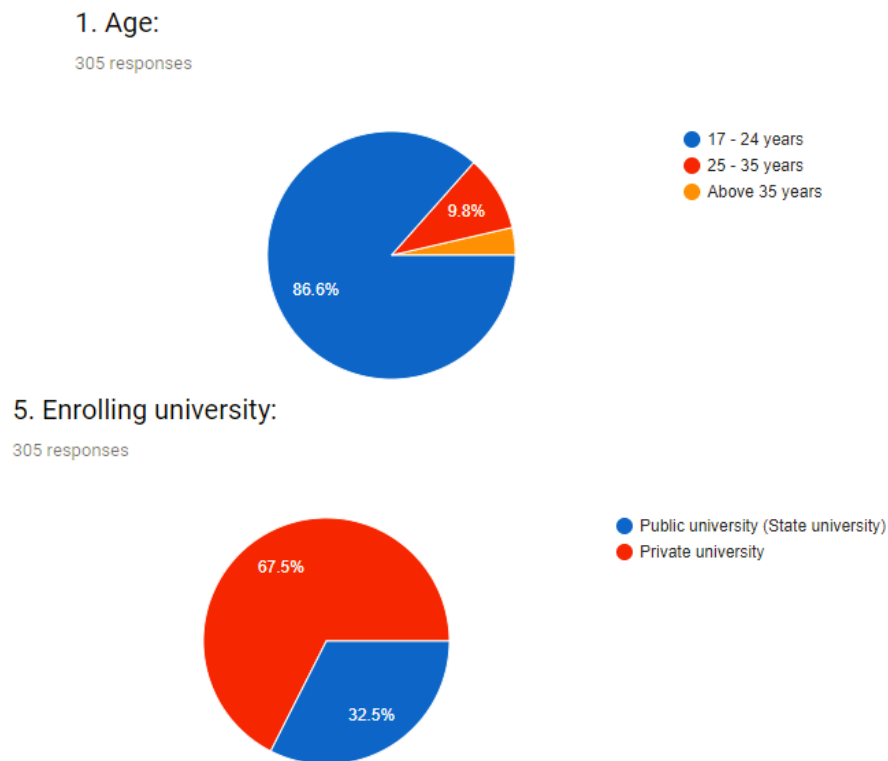


Figure 3.9: Graphical Representation of Demographical Variables

A sample of Vertical Bar Graph for some of the findings on Questionnaire A is displayed below, Figure 3.10:

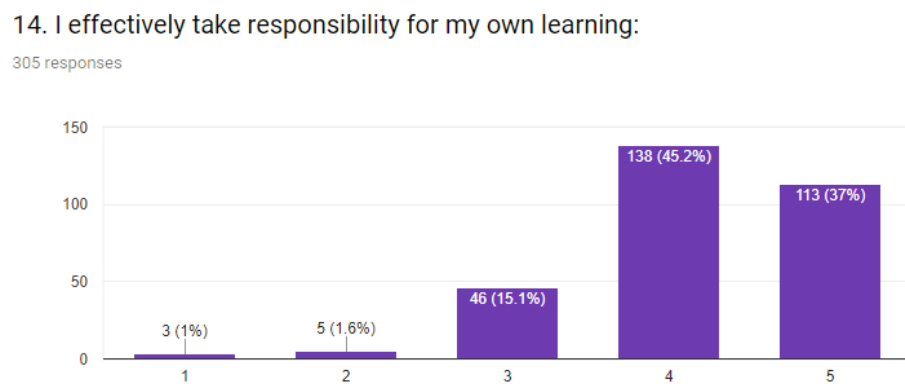


Figure 3.10: Bar Graph Representation of Demographical Variables

Correlations

Correlations are particularly important in assessing the degree of association between variables with statistical significance at .05 levels, and ultimately make inferences about the targeted population. In this study, 8 hypotheses were proposed for testing, constructed based on literature review:

H1: There is relation of statistical significance between *E-Learner Readiness* and *Willingness*.

H2: There is a relation of statistical significance between *E-Learner Readiness* and its components.

H3: There is relation of statistical significance between demographic variables and *E-Learner Readiness*.

H3a: There is relation of statistical significance between *Gender* and *Readiness*.

H3b: There is relation of statistical significance between *Age* and *Readiness*.

H4: There is relation of statistical significance between *Faculty E-Readiness* and *Willingness*.

H5: There is a relation of statistical significance between *Faculty E-Readiness* and its components.

H6: There is relation of statistical significance between demographic variables and *Faculty E-Readiness*.

H6a: There is relation of statistical significance between *Gender* and *Readiness*.

H6b: There is relation of statistical significance between *Age* and *Readiness*.

Pearson's correlation coefficient was used to test H1, H2, H3b, H4, H5 and H6b, while Coefficient of Determination R^2 were calculated to test hypotheses H3a and HH6a. Correlations were assessed as strong if coefficient of correlation is greater than .60, moderate if between .30 and .60, and low if below .30. It is to be noted however, that if a research hypothesis wasn't confirmed and a null hypothesis resulted, which is against expectations, another course of action would be taken. For instance, upon exploring associations in H3a and H6a, this study didn't obtain significant positive correlations, hence, Chi Square Test was conducted to further investigate the relationships.

A sample of Pearson Correlation test conducted on one of the hypotheses, Table 3.3:

Correlations			
		Global_Readiness	WillingEnrol
Global_Readiness	Pearson Correlation	1	.120*
	Sig. (2-tailed)		.037
	N	305	305
WillingEnrol	Pearson Correlation	.120*	1
	Sig. (2-tailed)	.037	
	N	305	305

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

Table 3.3: Sample of Pearson Correlation Test

Regression Analysis

Computation of Analysis of Variance (ANOVA) followed correlations, to better interpret understanding relationships and discuss the findings, where Beta, F-ratio and t-values were reported and discussed.

A sample on one of the regression analysis tests done to further test the sample hypothesis above, Table 3.4:

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.120 ^a	.014	.011	.92283
a. Predictors: (Constant), Global_Readiness				

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.746	1	3.746	4.398	.037 ^b
	Residual	258.038	303	.852		
	Total	261.784	304			

a. Dependent Variable: WillingEnrol						
b. Predictors: (Constant), Global_Readiness						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.256	.399		3.149	.002
	Global_Readiness	.013	.006	.120	2.097	.037

a. Dependent Variable: WillingEnrol						
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Table 3.4: Sample of Regression Analysis Test

Independent-Samples T-Test

As one test of inferential statistics, independent-samples t-test shows whether there is significant differences in the means of two separate groups. This test, supported by Levene's Test for Equality of Variances, was used to test possible influences of demographical variables such as gender, marital status and type of enrolling university on study variable 'readiness'. A sample of how the test was conducted is provided in the below Table 3.5, to assess the association between gender and global readiness.

Group Statistics					
Gender of Responder		N	Mean	Std. Deviation	Std. Error Mean
Global_Readiness	Male	149	62.6711	8.44893	.69216
	Female	156	60.9679	8.04216	.64389

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Global_Readiness	Equal variances assumed	.860	.354	1.804	303	.072	1.70319	.94427	-.15497	3.56136
	Equal variances not assumed			1.802	300.273	.073	1.70319	.94535	-.15715	3.56354

Table 3.5: Sample of Independent-Samples t-Test Results

One-Way ANOVA

One-way ANOVA was utilized to test the possible influence of demographical variables with more than two independent groups, such as age and educational background, on study variable ‘readiness’. It determines whether there is significant differences among the means of 2 or more groups. A sample of how the test was conducted is provided in the below Table 3.6, to assess the association between educational background and global readiness of student respondent, followed by Test of Homogeneity of Variances.

3.10.2 Qualitative Data Analysis

This study is situated in the field of applied social sciences, that focus on “discovery, insight, and understanding from the perspective of those being studied” (Merriam 2009, p. 1) that is best approached through qualitative research designs. The basic motive is the intellectual interest in the studied topic, with an ultimate goal of extending knowledge, with implications that will inform practice, and enhance quality of application. The process of data collection

was “recursive and dynamic” (p. 169), and findings become rigorous as the study and analysis progresses.

Global_Readiness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Undergraduate	254	61.5906	8.15643	.51178	60.5827	62.5984	33.00	82.00
Masters Student	45	62.7556	9.16306	1.36595	60.0027	65.5084	46.00	80.00
Doctoral Student	6	63.5000	6.56506	2.68017	56.6104	70.3896	57.00	71.00
Total	305	61.8000	8.27385	.47376	60.8677	62.7323	33.00	82.00

Test of Homogeneity of Variances

Global_Readiness

Levene Statistic	df1	df2	Sig.
.493	2	302	.612

ANOVA

Global_Readiness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	69.572	2	34.786	.506	.603
Within Groups	20741.228	302	68.680		
Total	20810.800	304			

Table 3.6: Sample of One-Way ANOVA

Many techniques (e.g. coding, data displays and special software) are used by qualitative researchers to facilitate organizing, classifying and finding the themes in their data, yet, ultimate meaningful connections to themselves and the readers must be established (Glesne 2011). This part will how the qualitative analysis was conducted. Data was carefully collected and managed in order to facilitate analysis, and at the process of the using interpretive approach to analyze will be described, Figure 3.11.

Step 1: Organizing Data

Four sources of data were used during qualitative data analysis, namely: the 305 responses on open-ended questions on Questionnaire A, 94 responses on the open-ended questions on Questionnaire B and transcripts from the 15 conducted interviews, and findings from pre-study literature for the purpose of comparing empirical results of this research against literature studies. During early phases, collected data was organized electronically to facilitate analysis. The researcher transcribed a set of fifteen interviews as a primary step in data analysis process, that were stored and saved in a secure place to avoid loss or destruction of data.

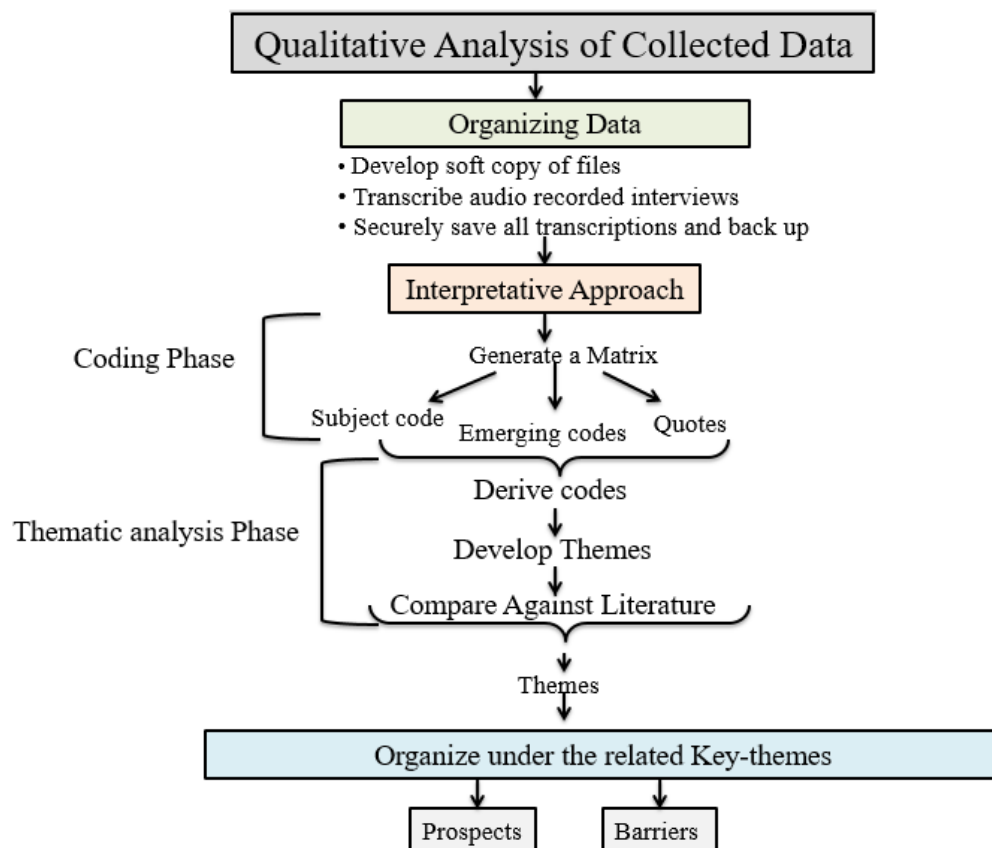


Figure 3.11: Qualitative Analysis Framework

Step 2: Interpretative Procedure

The ultimate aim of data analysis is to interpret and make meaningful sense of data, through “consolidating, reducing, and interpreting what people have said” (Merriam 2009, p. 176) and through the personal reflection and observation of the researcher. According to Wolcott (1994) (as cited in Glesne 2011, p. 209), at this stage interpretation is a mean of data transformation, occurring when “the researcher transcends factual data and cautious analysis and begins to probe into what is to be made of them” (p. 36). Transcripts and responses were thoroughly reviewed several times and were also printed into hard copies as at many times during analysis stage the researcher felt that she has to continuously move back and forth between bits of data, between inductive and deductive reasoning, to better generate meanings and understandings. Findings took the form of locating emerging themes and categories across data, that will be discussed below.

Step 3: Coding

Process of data reduction first took place to help in better organizing, categorizing and generating ideas around transcribed and collected data. Data reduction is a common form of analysis in qualitative research, where it aims to focuses data through identifying and examining repeated patterns that would converge towards deriving one final conclusion (Miles and Huberman 1994a). Codes, according to Glesne (2011), are used “to discern themes, patterns, processes, and to make comparisons and build theoretical explanations” (p. 194).

Careful reading of the responses and transcripts led to highlighting reflections and meanings on each phrase and paragraph. Data reduction was conducted over two phases:

Phase 1 concentrated on the open-ended questions addressing students.

Phase 2 concentrated on the open-ended questions addressing faculty.

Phase 3 concentrated on transcripts from middle managers.

Phase 4 concentrated on transcripts from senior executive managers.

The nature of adopted software to collect responses on questionnaires helped in data reduction and organization, Figure 3.12, where similar responses were quantitatively summarized, for instance poverty (2) indicating twice occurred, education for all (2).

This research study proposed two themes, mainly Key Theme Barriers and Key Theme Prospects, with 4 Themes, Student, Faculty, Academic Leaders and Ministry of Education and Higher Education. Under each theme, the responses related to key themes were first categorized, leading to two sets of data in table format, one under Key Theme Prospects and another Key Theme Barriers. The below table represents a sample of categorizing and assigning codes to quotes that occurred in Phases 1 and 2. Quotes are data scraps and sentences that are considered to be valuable for the researcher's investigation, obtained from the responses and transcriptions, whereas Codes are terminologies and titles assigned perception forwarded by the participant in relation to quotes, Figure 3.13.

Poverty (2)
Idk (2)
Education for all (2)
.. (2)
Book (2)
Pros: it makes it easier to students to learn and study remotely when it's most convenient to them. Interact with other students through online blogs and forums more systematically. Cons: the one-on-one human interactions (student-professor or student-student) are non-existent. This makes online degrees not regarded as serious and effective as the standard learning (where physical attendance is required)
Pros: they are flexible cons: some people don't take it as serious as it is
pros: easily accessible. cons: class + professor always better
Easily accessible. Variety of degrees and certification that are not provided in home country.(pros) No class interaction.
lack of organic interaction, but serves professional purposes

Figure 3.12: Sample of Data Collected and Displayed Electronically

Key Theme: Barriers Theme: Students
No self discipline Code: Self-Regulating Skills
Easily distracted Code: Self-Regulating Skills

Figure 3.13: Sample of Coding

In Phases 3 and 4, each interviewee’s answers were organized in table form containing the following: interviewee’s code name, key-themes in the first column, codes reflecting interviewee’s

perceptions on the asked questions in the second column and quotes in the third, Table 3.7.

The formulated table structures helped in performing a through and cohesive thematic analysis.

Step 4: Thematic Analysis

Thematic analysis is widely used technique in qualitative analysis of research studies, that works

by identifying patterns across a dataset (Braune and Clarke 2006). It entitles the researcher to search “through the data for themes and patterns” (Glesne 2011, p. 187), where pieces of

Key Theme: Prospects		
Interviewee Code	Code	Quote
RG	Respond to Space	Universities are going online because
	Constraint	it reduces their dependence on facility

Table 3.7: Sample of Interviewee Code

data that are coded in the same way are highlighted to understand the core of the code. Then, scraps of data coded in the same way for one case are tracked to find how they vary in relationship to other factors. Thematic analysis allows the researcher to utilize dataset in many ways that would insure accuracy of interpretations and meanings given to observations pertaining to studies phenomenon. The primarily step taken towards thematic analysis was coding, a long list of emerging codes resulted in each study, where those emerging codes were considered as potential themes, in a process where different codes merge towards forming overarching (or dominating) theme. Accordingly, formation of themes followed the below:

- 1- Searching through chunks and scarps of qualitative data
- 2- Distinguishing the repeated patterns

- 3- Assigning the codes
- 4- Searching for sub-themes through evolving the codes, merging some and breaking down other the rest whenever necessary
- 5- Reviewing sub-themes
- 6- Naming sub-themes under given themes student, faculty, academic leader and ministry.

For instance, under the Key Theme Prospects, a number of codes emerged from different student responses, Figure 3.14. Then, the researcher was able to merge these codes and break them down to form sub-theme components then sub-themes under themes and key themes. In that sense, themes were identified as critical components under key theme, sub-themes as critical component of themes, and sub-theme components under sub-themes.

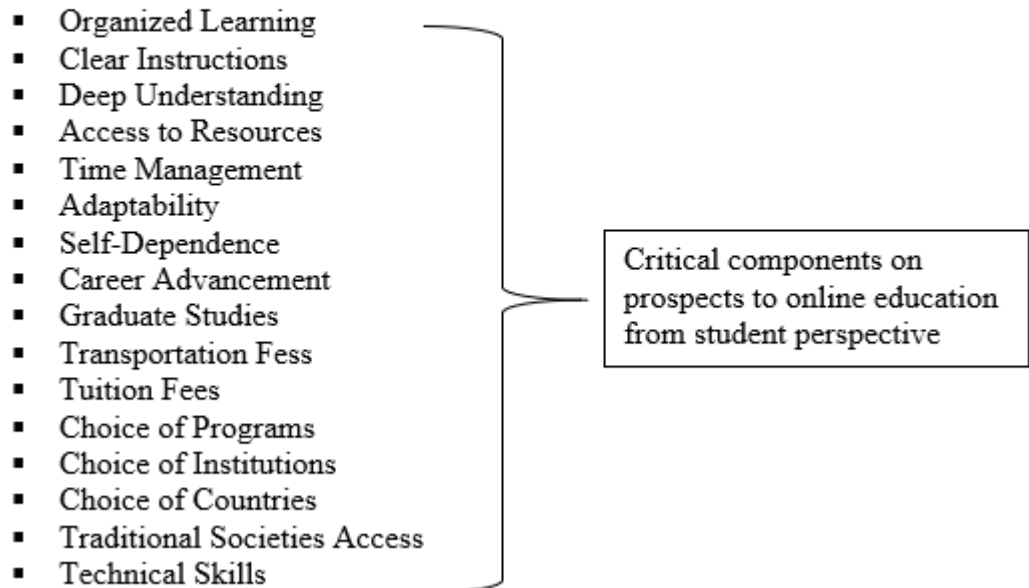
The above process is considered to be highly inductive where, the researcher started with bits and scraps of data that emerged into themes, however, at a certain point the researcher would “check out these tentative categories with subsequent interviews, observations, or documents” (Merriam 2009, p. 183), slightly turning into deductive approaches of analysis. Special attention was paid towards having mutually exhaustive themes and sub-themes and reaching higher levels of abstraction. Therefore, the researcher tried not to much expand thematic analysis, as according to Merriam (2009) and Crasewell (2007), it will be inducing descriptive findings rather than reaching abstract levels, while the main aim is to make inferences and develop a model.

Key Theme: Prospects

Theme: Students

Codes:

- Organized Learning
- Clear Instructions
- Deep Understanding
- Access to Resources
- Time Management
- Adaptability
- Self-Dependence
- Career Advancement
- Graduate Studies
- Transportation Fess
- Tuition Fees
- Choice of Programs
- Choice of Institutions
- Choice of Countries
- Traditional Societies Access
- Technical Skills



Critical components on prospects to online education from student perspective

Figure 3.14: Sample of Coding

Step 5: Integration of Findings

The previous Thematic Analysis allowed the research to extract the prospects and barriers occurring under the them Student, Study 1 Model 1 to be triangulated with quantitative findings Study 2 Model 2 and literature to produce Study 1 Model 3. Similarly prospects and barriers under faculty theme were extracted and triangulated with quantitative findings to form Study 2 Model 3. Whereas, Study 3 Model and Study 4 Model on prospects and barriers further to perception of senior institutional executives and academic decision makers developed as well. In that sense stakeholder analysis model on prospects and barriers to online education would have formed, based on Aparicio et al. (2016) e-learning framework.

Finally, empirical findings were used to offer solutions to derived barriers and generate a strategic implementation plan.

3.11 Delimitation

The scope of the current research study focuses on e-readiness of students and faculty for online education, along with willingness and acceptance of online education among key stakeholders in Lebanon, that would reflect on institutional readiness and possible shift in the strategical framework of academic decision makers in Lebanon. Therefore, opportunities and challenges at different dimensions impeding adoption and implementation of online education would develop.

3.12 Ethical Considerations

Bryman and Bell (2007)'s framework for dissertation's ethical considerations were used to as main principles guiding data collections as follows:

First, the current research study comprises minimal risk. It involves circulating online surveys to university students from a number of institutions in Lebanon and interviewing senior executives in their offices. In that sense, it doesn't expose any group to any possible harmful or illegal behavior. And neither the opposite was expected. Upon occurrence, plans were to consult relevant authorities.

Second, participation of subjects was based on clear informed consents. Quantitatively, online surveys were circulated, so the subject has the chance to withdraw at any time of convenience and data wouldn't have been recorded. A cover page is presented in the shape

of consent form, demonstrating the purpose of the research, and the process in which the participants are to be engaged in. The survey is completely anonymous doesn't call ask for the responder's or enrolling institution's name. Qualitatively, interviews were the main employed research method, and special attention was given to provide consent forms during the phase of setting up the interviews. It was verbally articulated, supported by written consent form, that gives the interviewee the right to understand the scope of the research, any possible implications of their participation, and that they have the right to freely withdraw anytime during the interview, while having all records deleted, without exercising any pressure. In addition, it was articulated that privacy and anonymity of the interviewee characteristics and obtained data overrides security measures, hence, the researcher shall not under any circumstance reveal the qualities of the interviewee. To ensure the confidentiality and anonymity of participants, codes were used on all records instead of their names in all materials and papers

Third, to ensure the safe and appropriate storage and handling of data, soft and hard copies of data were generated and stored in safe places: locked cabinets in locked office and laptop with login password to which only the researcher has access to.

Forth, a summary of collected data is provided to the participant towards the end of the interview to check on accuracy, while transcripts were readily available to be sent to the participant to upon request. The researcher made sure that at least 2 subjects are selected from each institution, so that accuracy can be verified across data collection.

Fifth, in an attempt to avoid possible occurrence of bias, questions were first formulated in a way that there is no correct or wrong answer and the focus is on the personal perception

and meanings provided by the interviewee. Second, many of the questions took the shape of third-party. Third, leading questions and help interviewees in wording were deliberately avoided. Forth, unnecessary personal information about the researcher wasn't given prior to starting the interviewing not to influence responders in any way. Fifth, data from individual source was continuously reevaluated to either confirm or falsify findings. Finally, the researcher strongly believes that posing quality questions at the right time, while remaining conscious to the sources of bias, the researcher can prompt the most intuitive and sincere responses form interviewees, ensuring high quality standards of collected data.

3.13 Trustworthiness

Regarding quantitative research methods, validity was ensured through factor analysis to ascertain that the developed instrument is measuring what it is required to measure, and the applicability of the adopted readiness model from foreign context on Lebanese context. On the other hand, reliability was ensured through calculating alpha Cronbach for each factor globally and its components.

Regarding the qualitative findings, trustworthiness of data was ensured through first continuous triangulations between different internal and external findings against local and international literature to confirm credibility. For instance, quantitative findings on students in Study 1, would be triangulated with qualitative findings in the same study, and against local and broad literature. Similarly, for Study 2 triangulation would take place. In Study 3 and 4, qualitative findings would be compared against the Pre-Study Model and literature to

verify validity of results. Findings from Study 1, 2, 3 and 4 are also compared to identify alignment and discrepancies. Second, the formation of codes and themes were based on majority of responses, hence, findings are transferrable to another situation within the same context. As indicated earlier, the researcher seeks to avoid bias, hence, confirming the conformability of findings. Finally, at least one person was asked to review and examine the research process and validate findings, to ensure dependability and findings can remain cohesive and consistent.

3.14 Summary

This section delineated on the employed research approach, along with the philosophical underpinnings, research design, mixed method, multiple case study approach, two survey questionnaires, interviews, population and sampling, quantitative and qualitative data analysis techniques, delimitation, ethical considerations, trustworthiness of findings and conclusion.

Next chapter, Chapter 4, will present the data analysis of Study 1, Study 2, Study 3 and Study 4 in details, followed by comparison approach across data to generate findings.

4 Analysis, Discussion and Key Findings

4.1 Overview of Chapter

Research design involved three main stages, presented in Figure 4.1, that led to developing final study model on the prospects and barriers towards adoption of online learning, followed by offering solutions to impeding challenges, and recommendations for strategic implementation of e-learning systems. Investigation started with Stage 1 that focused on document analysis, aiming at reviewing extensive literature in the field of online education in Lebanon, categorized under prospects and barriers, and denoted by Pre-Study Model. This chapter presents the second stage of research design, Stage 2, on data analysis, findings and discussion of findings. Data analysis was a complex process, where individual stakeholder cases were analyzed separately, resulting in analysis procedure conducted along four levels:

Level 1: Quan – Qual

Level 2: Qual – Qual

Level 3: Qual – Qual

Level 4: Comparison Across Dataset

A detailed analysis of the four conducted studies that took place, Study 1, Study 2, Study 3 and Study 4 is presented, Figure 4.1.

Level 1

4.2 Study 1 on Student Readiness, Willingness and Acceptance Findings

Study 1 comprised quantitative and qualitative analysis of data collected on students,

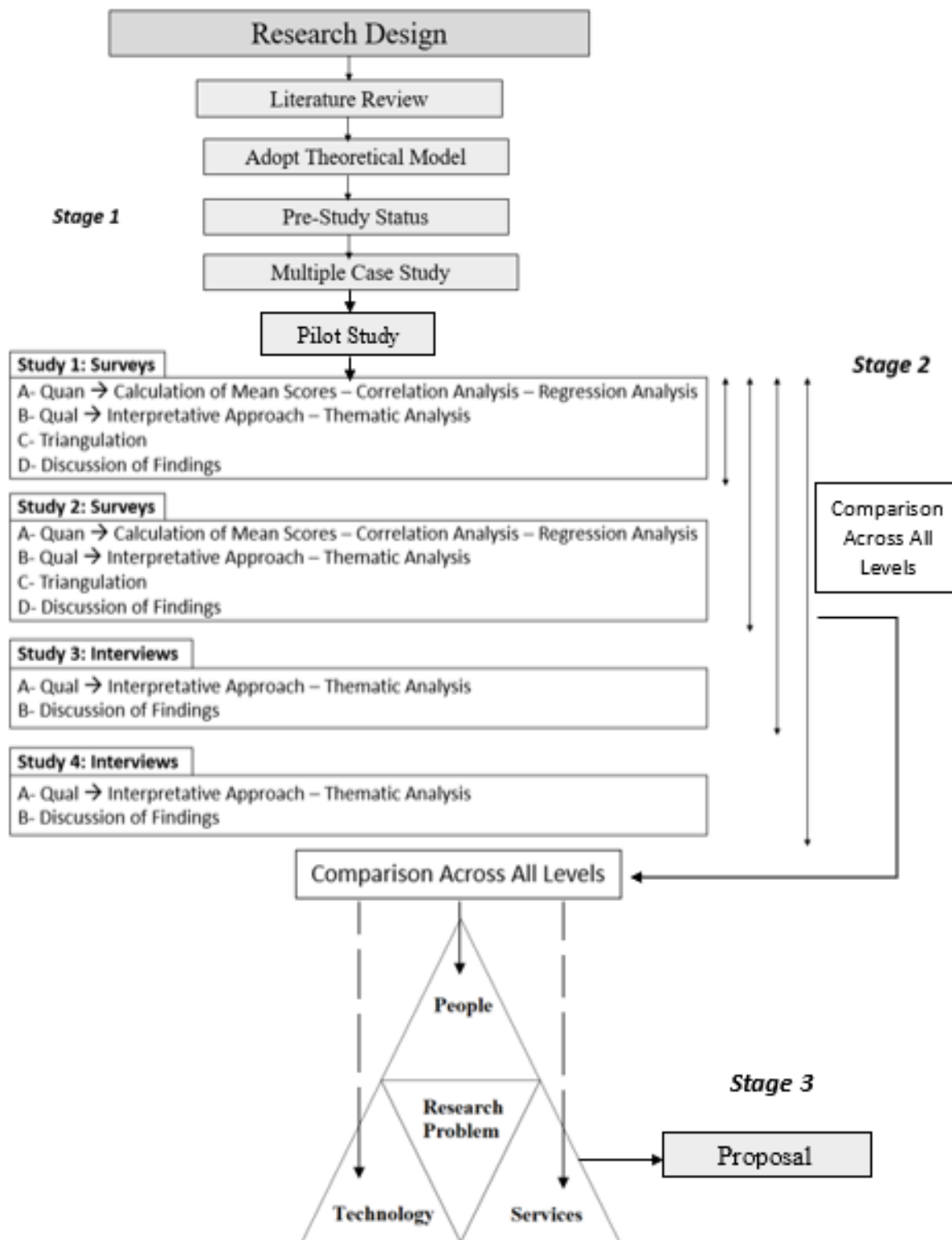


Figure 4.1: Research Design

followed by discussion of findings that triangulated data from different sources in the light of literature. Special attention was given in comparing derived findings against earlier literature on Lebanese context. Accordingly, analysis led to Study 1 Model 1, then Model 2, then Model 3 where the prospects and barriers pertaining to student readiness and attitude emerged.

Mixed-methods was employed, where data was first collected quantitatively, assessing the readiness of Lebanese students for online education and testing a number of hypotheses and associations, followed by qualitative data to explore the perception of students toward online education. At this stage, perception was gauged through: (i) willingness of students to pursue online degrees, and (ii) the perceived strengths and weaknesses. The will to take online classes and seek online degree is one form of behavioral intention that will reveal acceptance of online education among Lebanese students, whereas the perceptions of students pertaining to advantages and disadvantages will convey their preferences and factors affecting their willingness. Data analysis aims at answering a set of research questions that would lead to deriving the prospects and barriers towards adoption of online learning at the level of e-learners. Particularly, it aims to answer the following research questions:

- **What are the prospects and barriers in the e- readiness level among higher education students in Lebanon and perception towards online learning?**
 - What is the level of e-readiness among students to enroll in online classes?
 - What are the factors affecting e-readiness of the Lebanese student?
 - Is there a relationship of statistical significance between student e-readiness and willingness to learn online?

- Is there a relationship of statistical significance between student e-readiness variable and its components?
- Is there a relationship of statistical significance between student various demographic and *Readiness*?
- How could the acceptance of online education among Lebanese students be described?

This section also aims at testing the following hypotheses:

- **Hypotheses:**

- H1: There is relation of statistical significance between E-Learner *Readiness* and *Willingness*
- H2: There is a relation of statistical significance between E-learner *Readiness* and its components.
- H3: There is relation of statistical significance between demographic variables and E-Learner *Readiness*
- H3a: There is relation of statistical significance between *Age* and *Readiness*
- H3b: There is relation of statistical significance between *Gender* and *Readiness*
- H3c: There is relation of statistical significance between *Marital Status* and *Readiness*
- H3d: There is relation of statistical significance between *Educational Background* and *Readiness*
- H3e: There is relation of statistical significance between *Enrolling University* and *Readiness*

A survey incorporating Alem et al. (2016) model to assess student e-readiness, and explore willingness and perception was circulated online yielding 305 valid responses. Collected data was analyzed quantitatively and qualitatively as follows:

To analysis quantitative data, descriptive statistics using SPSS v.20 was used to derive the demography of respondents, then run factor analysis and reliability tests to verify validity and reliability of the adopted model and questionnaire. Descriptive statistics through quantitative percentages and means were utilized to analyze data collected via questionnaire then represent them graphically. This study doesn't hold any hypotheses, rather it will be reserved for an extended study beyond the scope of this dissertation, and hence, application of sophisticated statistical analyses would be of little significance.

To analyze students' responses on the close-ended and open-ended questions, first quantitative analysis of qualitative data was used to study students' responses to identify their intention to pursue online degrees, using percentages. Then thematic analysis was applied to investigate the factors affecting their willingness and behavior towards online education, through deriving two themes, and a number of sub-themes, sub-themes components and codes.

4.2.1 Study 1 Quantitative Analysis

- **Research Question: What is the level of readiness among students to enroll in online classes?**

The Statistical Package for Social sciences (SPSS v. 20) was used to analyze data, run tests and draw findings. The below section will reveal the demographic data, then factor analysis, reliability test and finally descriptive statistics of student readiness.

4.2.1.1 Demographic Data of the Respondents

The below Table 4.1 presents the demographical pertaining to the respondents who took the survey. The first section of the questionnaire comprised ten questions on the demography. Total number of respondents was 305, among which 86% belongs to the 17 – 24 years age group, 10% were between 25 and 35 years, whereas only 3.6% are above 35 years old. Female and male response rates were almost similar with ratio 51.1:48.9. Majority of the respondents were unmarried (95%) and only 15% were married. Students of different educational backgrounds took the questionnaires where the largest group was undergraduate (83%), while only 17% were graduate students, either master's or Doctoral candidates, which tends to be consistent with the age findings that almost 87% of respondents were below 24 years old age group. The largest group of respondents are enrolled in private universities, where only 32.5% are State University students, and the rest (68%) are from public institutions in Lebanon. Regarding educational achievement, majority reflected high CGPA, where 55% of students taking this questionnaire indicate a high GPA of 3.00 and above, 34% had CGPA between 2.00 and 3.00, only 1% were below 2.00 and around 10% were unsure about their CGPA, either because they are unaware of their performance or the marking and scale system doesn't use grade point average. A graphical summary (histogram) is presented as Appendix A.

	Age	Gender	Marital Status	Educational Background	Enrolling University	CGPA	Nationality
17 – 24 years	264 86.6%						
25 – 35 years	30 9.8%						
Above 35 years	11 3.6%						
Male		149 48.9%					
Female		156 51.1%					
Married			15 4.9%				
Unmarried			290 95.1%				
Undergraduate				254 83.3%			
Masters				45 14.8%			
Doctoral				6 2%			
Public University					99 32.5%		
Private University					206 67.5%		
3.00 – 4.00						167 54.8%	
2.00 – 3.00						105 34.4%	
Below 2.00						3 1%	
Unsure						30 9.8%	
Lebanese							294 96.4%
Non-Lebanese							11 3.6%

Table 4.1: Student Respondents Demographic Data

4.2.1.2 Factor Analysis

- **Research Question: What is the level of readiness among higher education students in Lebanon for online learning?**

Prior to analyzing the questionnaire responses, the need emerged to ensure validity of the items on the scale. Factor analysis was used to reduce variables, through identifying the variables that appear to be clustering in a significant way. The 17 items of E-learner Readiness factors were first factor analyzed, Table 9, with the minimal loading cutoff score considered to be ± 0.5 (Suliman 2001).

The table below, Table 4.2, shows that all of the 5 factors were successfully loaded. The forth factor (Motivation) scored a minimum of 0.498, which could be rounded up to 0.50, thus, the factors scored 0.50 and above on the varimax rotation. Three items loaded under Factor 2 (Perceived Usefulness), items 4, 5 and 6. Five items loaded under factor 1 (Self-Competence), namely, items 7, 8, 9, 10 and 11, then, 3 items loaded under Factor 3 (Motivation), items 1, 2 and 16. 3 items loaded under Factor 4 (Motivation), items 12, 13 and 14, and 2 items loaded under the 5th factor (Financial), items 15 and 17. Eventually, item 3 has been dropped, with loading cut off score 0.4 which is less than 0.5.

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>	<i>Factor 5</i>
<i>Item 7</i>	.732				
<i>Item 8</i>	.831				
<i>Item 9</i>	.785				
<i>Item 10</i>	.772				
<i>Item 11</i>	.621				

<i>Item 4</i>	.900		
<i>Item 5</i>	.889		
<i>Item 6</i>	.907		
<i>Item 1</i>		.856	
<i>Item 2</i>		.895	
<i>Item 16</i>		.560	
<i>Item 12</i>			.646
<i>Item 13</i>			.796
<i>Item 14</i>			.500
<i>Item 15</i>			.581
<i>Item 17</i>			.771

Table 4.2: Student Readiness Scale Factor Analysis

Knowing that the determinant of the R-matrix “should be greater than 0.00001” (Field 2005, p. 2), the determinant in this study was found to be .001, that is larger than the necessary value. The value of KMO is .790 meaning that factor analysis results in reliable factors (2005), knowing that values between 0.7 and 0.8 are considered to be “good” results (Keiser 1974 in Field 2005). The Bartlett test appears to be highly significant with value .000 (< 0.05), and accordingly factor analysis yielded reliable findings.

4.2.1.3 Reliability Test

Reliability Test of the Learner E-Readiness as global variable, followed factor analysis, with the minimal alpha value that is to be accepted in this study is 0.6 (Suliman 2001). The below Table 4.3 indicates that Global Cronbach alpha for the E-Learner Readiness variable was .790 for the 17 items, and 0.803 after deleting Item 3, which is higher than 0.6 and

acceptable, and is considered to be of a ‘good value’, as above.80. Therefore, the above table indicates that the global factor and components are reliable, with Alpha Cronbach values of .878, .914, .837, .638 and .623 respectively.

	Alpha Cronbach	No of Items
Total	.803	16
Global Factor Self-Competence	.878	2
Global Factor Perceived Usefulness	.914	3
Global Factor Self-Directed Learning	.837	5
Global Factor Motivation	.638	3
Global Factor Finance	.623	3

Table 4.3: Reliability Test

4.2.1.4 Means for E-Learning Readiness Items

Questionnaire items were analyzed using SPSS, and measures of central tendency were calculated through mean scores and standard deviations. The results are summarized in Table 4.4:

	Mean	SD
Self-Competence: This part shows your ability to utilize your skills in the use of any computer tool		
I am competent using a computer:	4.1377	.82362
I am confident with computers.	4.0787	.87003
Perceived Usefulness: This part shows your derived benefits from using online systems		
I believe that using the online learning improves my performance in my studies.	3.7443	.99679

I believe that using online learning will increase my productivity.	3.7377	1.04978
I believe that using online learning enhances my effectiveness in my studies.	3.6885	1.02182
Self-directed Learning: This part reflects on your strategies for managing learning		
I effectively take responsibility for my own learning.	4.1574	.80795
I am confident in my ability to independently prioritize my learning goals.	3.9639	.89333
I am able to set my own learning goals.	4.0295	.84825
I am independent in my learning.	4.0000	.89222
I am able to manage my study time effectively and easily complete assignments online.	3.7311	1.03548
Motivation: This part reflects your encouragement to learn		
I am able to complete my work even if there are distractions in my home (i.e. television, children, and such).	3.2984	1.25636
I can not complete my work if there are online distractions (i.e. friends, sending e-mails or websites to surf).	3.140	1.15414
Even in the face of technical difficulties, I am certain I can learn the material presented in online learning.	3.5115	.92162
Financial: This part describes your financial support that is sufficient to complete online courses		
I can take a loan or borrow money to buy a computer for e-learning purposes.	2.7934	1.18930
I have access to a personal computer and Internet access for e-learning purposes.	4.0590	1.00154
My institution provides a computer loan to the student.	2.2197	1.15035
TOTAL	3.63	

Table 4.4: Mean scores of Student Readiness Items

To analyze and reflect on the above results, this study will adopt Aydin and Tasci's (2011) e-learning expected level of an individual readiness for e-learning systems, which is identified as mean score of 3.40, Figure 4.2.

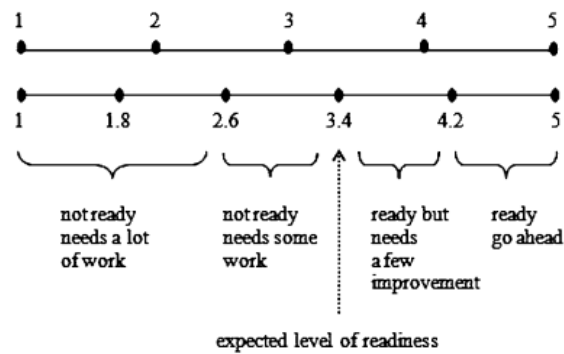


Figure 4.2: E-Learning Readiness Assessment Model (Aydin and Tasci 2011)

This model has been used in several research papers to evaluate readiness of faculty, personnel and individuals (Soydal et al. 2011; Rasouli et al. 2016), allowing to interchange between quantitative and qualitative spectrums. The expected level of readiness is defined as a score of 3.40, Figure 4.3.

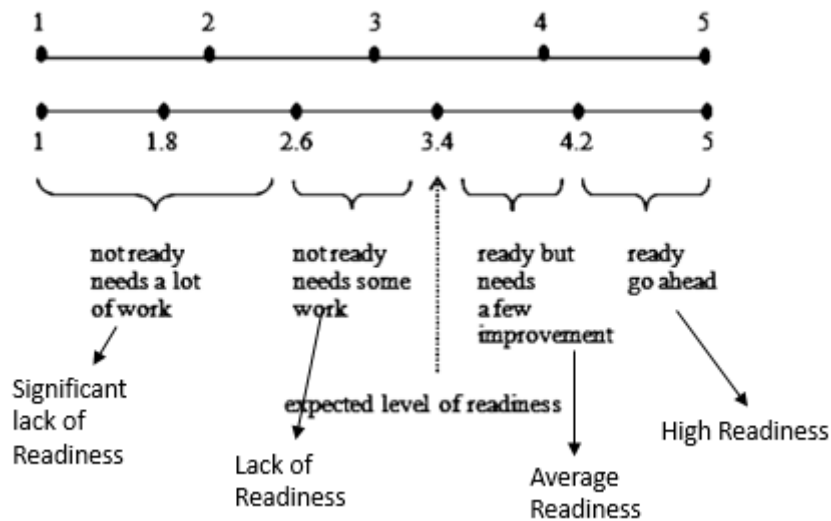


Figure 4.3: E-Learning Readiness Assessment Model (Adapted from Aydin and Tasci 2011)

The mean scores for e-learning readiness 17 items is displayed in the above table. Based on the adopted assessment model, most of the items scored well. Only one items score very low

(<2.6), and another 3 items between 2.6 and 3.4. The remaining items scored between 3.51 and 4.14.

Total readiness mean score was around 3.56, proving that on average the surveyed Lebanese students are ready for e-learning. In terms of self-competence skills in using computers, items 1 and 2 scored high with mean scores of 4.08 and 4.14, indicating the Lebanese students who took the test are familiar with computer systems and comfortable in using associated tools. Also, they appeared to be knowledgeable about the necessary software used in online education, and its usage, where Item 3 scored 3.5082, at the expected level of readiness. With respect to perceived usefulness, items 4, 5 and 6 scored well, with mean scores ranging between 3.69 and 3.74. The scores indicate an embracing attitude from the Lebanese students to online learning, in terms of perceived usefulness on increasing productivity, enhancing performance and promoting effectiveness.

Items 7, 8, 9, 10 and 11 reflected how self-directed the Lebanese students are in their learning, managing their time effectively and taking charge of their own learning. Mean scores ranged from 3.73 to 4.16, above expected levels of readiness, indicating that respondents are suitable candidates to study in an online learning environment. Mean scores on motivation and encouragement to complete online assignments varied between readiness at expected levels and below. Items 12 and 13 reveal readiness of student to stay focused despite distractions, scoring below 3.4, suggesting that the respondents are easily distracted, presenting a challenge in commitment to complete course requirements. Item 14's mean score was 3.5, revealing that respondents with their adequate computer skills can overcome technical challenges and stay engaged. Last part assessed access to a personal computer or

laptop. Items 15 and 17 showed low mean scores 2.79 and 2.2 respectively, while item 16 had high mean score of 4.01. The resulting mean scores, Table 4.5, indicate that most of the students who took the survey have access to a personal computer and Internet connection. However, it also shows that otherwise unprovided, students are not capable of applying for a loan either through bank or any other organization to own a computer/laptop.

Scale	Qualitative Scale	Items
1 – 2.6	Significant Lack of Readiness	15, 17
2.6 – 3.4	Lack of Readiness	3, 12, 13, 15
3.4 – 4.2	Average Readiness	2, 4, 5, 6, 8, 9, 10, 11, 14, 16
4.2 – 5	High Readiness	1, 2

Table 4.5: Summary of Mean Scores

4.2.1.5 E-Learner Readiness and Willingness Findings

In order to identify the relationships between the independent and dependent variables, and to further explore the degree of significance, the Pearson Correlation Coefficient test was conducted to test H1 and H2. Spearman's correlation test is one way to test hypotheses, with correlation coefficient is a "non-parametric statistic and so can be used when the data have violated parametric assumptions such as non-normally distributed data" (Field 2011, p. 179).

- **H1: There is relation of statistical significance between E-Learner *Readiness* and *Willingness***

The below Table 4.6 indicates that there is a positive correlation between the dependent variable Willingness and the independent variables E-Learner Readiness. The relation is

significant at the .05 level, with corresponding significant value of $\rho = .037$, the correlation coefficients is $r = .120$ indicating weak relationship. These findings confirm the hypotheses H1, the readier the student for online education is, the better accepting he/she is to be engaged in online learning.

Correlations			
		Global_Readiness	WillingEnrol
Global_Readiness	Pearson Correlation	1	.120*
	Sig. (2-tailed)		.037
	N	305	305
WillingEnrol	Pearson Correlation	.120*	1
	Sig. (2-tailed)	.037	
	N	305	305

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

Table 4.6: Spearman Correlation Test Result

The correlation test results in Table 4.6 informs on a highly significant relationship between the two variables, where $r = .120$ and $\rho = .037$, confirming H1. The better readiness among the student for online learning, the more willing he/she is to pursue online education. In addition, Table 4.7 regression analysis shows that the coefficient of determination R^2 is .014 implying that Readiness do explain some of the variation in Willingness, while majority of variability is accounted by other factors.

F-ratio is 4.398 that is highly significant ($\rho = .037$), indicating that there is less than 5% chance that such a value of F-ratio would occur, if a null hypothesis (H_0 instead of H_1) was true. The t-statistic value is 3.149 with a significance value accounting for .002. The value of $b_1 = .013$, representing “the change in the outcome associated with a unit change in the predictor” (2011, p. 208). Therefore, it could be concluded that, if the predictor variable e-

learner readiness is increased by one unit, then willingness will increase by .013, otherwise, “the probability of these t-values or larger occurring” (Field 2011, p. 208) is less than .05. Therefore, E-Learner Readiness is considered to be a contributor towards predicting Student Willingness, the readier the student for online education is, the better accepting he/she is to be engaged in online learning

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.120 ^a	.014	.011	.92283

a. Predictors: (Constant), Global_Readiness

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.746	1	3.746	4.398	.037 ^b
	Residual	258.038	303	.852		
	Total	261.784	304			

a. Dependent Variable: WillingEnrol

b. Predictors: (Constant), Global_Readiness

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.256	.399		3.149	.002
	Global_Readiness	.013	.006	.120	2.097	.037

a. Dependent Variable: WillingEnrol

Table 4.7: Regression Analysis Results

- **H2: There is a relation of statistical significance between E-Learner *Readiness* and its components.**

There exist a significant, strong and positive correlation between independent variables Self Competence, Perceived Usefulness, Self-Directed Learning, Motivation, Financial and global dependent variable E-Learner Readiness, confirming H2. Corresponding correlation

coefficients, Table 4.8, where .504, .660, .762, .606 and .551, that are all highly significant at the .01 level, where ρ is between .000 and .001. Therefore, this study proved that these five factors are actual components of e-learner readiness, and once they are fulfilled, an adequate readiness level to engage in online learning should yield. Specifically, if students are self-directed learners, technology competent, motivated, have the appropriate finances and find online learning to be useful, then this in return will increase readiness levels.

		Correlations					
		Global_Readiness	SelfCompetence	PerceivedUsefulness	SelfDirectedLearning	Motivation	Finance
Global_Readiness	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	305					
SelfCompetence	Pearson Correlation	.504**	1				
	Sig. (2-tailed)	.000					
	N	305	305				
PerceivedUsefulness	Pearson Correlation	.660**	.197**	1			
	Sig. (2-tailed)	.000	.001				
	N	305	305	305			
SelfDirectedLearning	Pearson Correlation	.762**	.193**	.348**	1		
	Sig. (2-tailed)	.000	.001	.000			
	N	305	305	305	305		
Motivation	Pearson Correlation	.606**	.155**	.204**	.360**	1	
	Sig. (2-tailed)	.000	.007	.000	.000		
	N	305	305	305	305	305	
Finance	Pearson Correlation	.551**	.190**	.230**	.250**	.198**	1
	Sig. (2-tailed)	.000	.001	.000	.000	.001	
	N	305	305	305	305	305	305

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

Table 4.8: Spearman Correlation Test Results

Moreover, the Beta weights in Table 4.9 indicate that Self-Directed Learning explains 42% the variance in Readiness, whereas Perceived Usefulness 34%, Motivation, Finance and Self-Competence account for 29%, 26% and 26%. All these values are highly significant at .00 level. Therefore, the feature of self-directed learner appeared to be of the greatest contributor, and any change at the level will largely increase the e-readiness of the student, followed by perceived usefulness.

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.840E-14	.000		.000
	SelfCompetence	1.000	.000	.261	.000
	PerceivedUsefulness	1.000	.000	.343	.000
	SelfDirectedLearning	1.000	.000	.422	.000
	Motivation	1.000	.000	.293	.000
	Finance	1.000	.000	.259	.000

a. Dependent Variable: Global_Readiness

Table 4.9: Beta Values of Readiness Components

Demographic Variables and E-Learner Readiness

Five demographic variables were investigated, namely, age, gender, marital status, educational background and type of enrolling university as private or public. To test the influence of demographical variables on levels of e-learner readiness, One-way ANOVA was used to assess variances of mean scores between different groups pertaining to age and educational background in relation with levels of e-readiness. Independent-samples t-test was used to investigate the association between gender, marital status and enrolling university on e-readiness levels of students.

▪ H3a: There is relation of statistical significance between *Age* and *Readiness*

In order to test age differences in ELR dimensions, One-way ANOVA was conducted revealing no significant differences between age groups, confirming a Null Hypothesis, Table 4.10.

Descriptives

Global_Readiness								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
17-24 years	264	61.4508	8.20492	.50498	60.4564	62.4451	33.00	82.00
25-35 years	30	63.7667	9.02366	1.64749	60.3972	67.1362	48.00	80.00
Above 35 years	11	64.8182	7.04014	2.12268	60.0885	69.5478	53.00	73.00
Total	305	61.8000	8.27385	.47376	60.8677	62.7323	33.00	82.00

Test of Homogeneity of Variances

Global_Readiness			
Levene Statistic	df1	df2	Sig.
.574	2	302	.564

ANOVA

Global_Readiness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	248.437	2	124.219	1.824	.163
Within Groups	20562.363	302	68.087		
Total	20810.800	304			

Table 4.10: One-way ANOVA Results between Variables Age and Readiness

Descriptive Statistics show that the readiness levels among the ‘above 35 years old’ age group is high with mean score of 62, compared to ‘25 – 35 years old’ age group with mean 64, and the ‘17-24 years’ age group of mean 61. Standard deviation for the first group was 8.2, 9.02 for the second, and 7.04 for the third. Furthermore, the assumption of Homogeneity of Variances was tested resulting insignificant based on Leven’s Statistic Test with $\rho = .564$. The independent-between groups ANOVA shows a non-statistically significant result where $F(2, 302) = 1.82$, and $\rho = .163$, $\rho < .05$. Therefore, Analysis of variance showed that the gender of the student on readiness isn’t significant, indicating that age is not a significant contributor in the readiness levels of the student.

- **H3b: There is relation of statistical significance between *Gender* and *Readiness***

An independent-samples t-test was conducted to compare online learning readiness levels among students in relation to gender of the students, female or male. Table 4.11 shows that gender wasn't found to have significant effect on online learning readiness.

Group Statistics					
Gender of Responder		N	Mean	Std. Deviation	Std. Error Mean
Global_Readiness	Male	149	62.6711	8.44893	.69216
	Female	156	60.9679	8.04216	.64389

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Global_Readiness	Equal variances assumed	.860	.354	1.804	303	.072	1.70319	.94427	-.15497	3.56136
	Equal variances not assumed			1.802	300.273	.073	1.70319	.94535	-.15715	3.56354

Table 4.11: Independent-Samples t-test Between Variables Gender and Readiness

Results indicate that there was no significant different difference in the levels of readiness between Males, $M = 62.3$ and $SD = 8.50$ and Females, $M = 60.97$ and $SD = 8.04$, where $t(303) = 1.80$ and $\rho = .072$ which is greater than .05. Levene's Test for equality of variance further confirms that mean score between the two groups is not statistically significant with $\rho = .354$.

- **H3c: There is relation of statistical significance between *Marital Status* and *Readiness***

Group Statistics					
	Marital Status of Responder	N	Mean	Std. Deviation	Std. Error Mean
Global_Readiness	Married	15	63.7333	5.82441	1.50386
	Unmarried	290	61.7000	8.37629	.49187

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Global_Readiness	Equal variances assumed	1.679	.196	.928	303	.354	2.03333	2.19135	-2.27886	6.34553
	Equal variances not assumed			1.285	17.146	.216	2.03333	1.58225	-1.30276	5.36943

Table 4.12: Independent-Samples t-test Between Variables Marital Status and Readiness

An independent-samples t-test was used to test the influence of marital status on e-readiness of the students, showing a relationship that is not significant. Table 4.12 shows that fifteen students were married, versus 290 unmarried, where for the married group $M = 63.73$ and $SD = 5.82$, whereas for the second group, $M = 61.70$ and $SD = 8.38$, $t(303) = .929$ and $\rho = .354$ which is greater than .05. Levene's Test for equality of variance further confirms that mean score between the two groups is not statistically significant with $F = 1.68$ and $p = .196$.

- **H3d: There is relation of statistical significance between *Educational Background* and *Readiness***

Global_Readiness								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Undergraduate	254	61.5906	8.15643	.51178	60.5827	62.5984	33.00	82.00
Masters Student	45	62.7556	9.16306	1.36595	60.0027	65.5084	46.00	80.00
Doctoral Student	6	63.5000	6.56506	2.68017	56.6104	70.3896	57.00	71.00
Total	305	61.8000	8.27385	.47376	60.8677	62.7323	33.00	82.00

Test of Homogeneity of Variances

Global_Readiness			
Levene Statistic	df1	df2	Sig.
.493	2	302	.612

ANOVA

Global_Readiness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	69.572	2	34.786	.506	.603
Within Groups	20741.228	302	68.680		
Total	20810.800	304			

Table 4.13: One-way ANOVA Test Results between Variables Education and Readiness

In order to test educational background differences in OLR dimensions, One-way ANOVA was conducted, Table 4.13, revealing no significant differences between groups, confirming a Null Hypothesis. The ‘Undergraduate’ student group had $M = 61.60$ and $SD = 8.157$, ‘Masters’ student group has $M = 62.76$ and $SD = 9.16$, while ‘Doctoral’ group had $M = 63.50$ and $SD = 6.57$ ANOVA table shows that $F(2,302) = .506$ and $\rho = .603$ that is greater than .05 and not significant. Levene Statistic test is not statistically significant with $\rho = .612$, confirming a null hypothesis.

- **H3e: There is relation of statistical significance between *Enrolling University and Readiness***

An independent-samples t-test was conducted to test whether the type of enrolling university, Table 4.14, as to public or private, had any significant effect on online learning

readiness. Results showed that 99 students were enrolled in the only one public university with $M = 61.46$ and $SD = 7.13$, and the rest, 206 students were part of private higher education institutions with $M = 61.96$ and $SD = 8.78$. The independent-samples t-test show that the effect of the type of enrolling university of the student on his/her online learning readiness is not significant. Lavene's Test is further significant with $F = 3.410$ and $\rho = .066$. In addition, $t(303) = -.490$ and $\rho = .624$, confirming that mean score between the two groups is not statistically significant, and the acceptance of null hypothesis.

Group Statistics					
	Enrolling University of Responder	N	Mean	Std. Deviation	Std. Error Mean
Global_Readiness	Public University	99	61.4646	7.13187	.71678
	Private University	206	61.9612	8.78182	.61186

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Global_Readiness	Equal variances assumed	3.410	.066	-.490	303	.624	-.49652	1.01309	-2.49011 1.49707
	Equal variances not assumed			-.527	233.568	.599	-.49652	.94241	-2.35324 1.36020

Table 4.14: Independent-Samples t-Test Results on Enrolling University and Readiness

- **H3: There is relation of statistical significance between demographic variables and E-Learner Readiness**

Therefore, given the above, a null hypothesis is confirmed, where the demographical variables, age, gender, marital status, educational background and type of enrolling university do not significantly influence e-learner readiness of Lebanese student in higher education.

4.2.1.6 Study 1 Quantitative Model

Quantitative findings showed:

- A statistically significant relationship between e-learner readiness and willingness to learn online.
- Demography of students doesn't influence their e-readiness levels.
- Overall adequate readiness among Lebanese students to engage in online learning.
- Findings on the factors affecting e-readiness levels of the students, categorized under prospects and barriers lead to the development of **Study 1 Model 1**, Table 4.15:

Prospects in Student Readiness	Barriers in Student Readiness
Proficiency and confidence in using computers	Knowledge and confidence in using online software
Perceived usefulness of online education	Commitment to complete online assignments
Have the necessary self-directed learning skills	Difficulty in financing computer if not available
Able to overcome technical difficulties to complete required material	
Have access to personal computers and Internet	
Adequate readiness despite gender, enrollment in public or private university, and other demography concepts.	

Table 4.15: Study 1 Model 1

4.2.2 Study 1 Qualitative Analysis

- **Research Question: How could the acceptance of online education among Lebanese students be described?**

Acceptance of online education in this study is considered to be a product of willingness to take online classes and perception towards this mode of delivery. The first level of analysis aimed at showing that the adopted online learning readiness model of Alem et al. (2016) is applicable to the Lebanese context through factor analysis and reliability test, where e-learning readiness proved to be a function of 5 constructs, namely, self-competence, self-directed learning, motivation, financial and usefulness. The students, were then asked to respond to short question that would clarify their willingness to pursue online degrees and elaborate on the perceived advantages and disadvantages of online education. Particularly, the aim is to explore the acceptance of online education by Lebanese students, and the factors affecting their willingness to take online classes.

Short questions (open-ended) seek to scrutinize students' expected intentions and attitudes towards taking and enrolling in online degrees. For long educators confirmed that learner's attitudes and reactions are interconnected, hence, if a learner is about to accept online education and pursue an online degree, a positive attitude should have occurred first (Paris 2004). Similarly, Burns who affirms that "attitudes are evaluated beliefs which predispose the individual to respond in a preferential way" (Burns 1997, p. 456, in Paris 2004, p. 101). Therefore, along with assessing the readiness of Lebanese higher education students for online learning, it deems important to understand how they perceive this type of education, the advantages and disadvantages, and their readiness to earn a degree online, if the country advances to a stage where accreditation is achieved.

4.2.2.1 Willingness to Pursue Online Education

Willingness to enroll in online courses is the behavioral intention of the Lebanese student. Total number of student responses was 305, among which only 131 gave meaningful answers to the above short questions, distributed as follows in the below Table 4.16. It is to be noted however, that omitted responses were those that didn't answer the main question in anyway or help in understanding the responder's perception, such as: Others, NA, etc.

Response	Frequency
Yes, they would pursue online degree	56 43%
No, they wouldn't consider online degrees	52 40%
Unsure	23 17%

Table 4.16: Student Willingness Results

As indicated in the above table, 43% of students agree on pursuing online education, whereas 40% show reluctance and 17% are unsure. Although ratios of agreement to disagreement were close to 1 ($43:40 = 1.075$), these results show increased acceptance of online education, in a country where Ministry of Education and Higher Education yet to acknowledge the need for transmuting educational systems to be embrative to web-instruction and accrediting online education. Thus, they are considered to be important findings, indicating a shift in the culture among Lebanese students, towards better acceptance of online degrees.

4.2.2.2 Perception towards Online Education

- **How could the acceptance of online education among Lebanese students be described?**

Qualitatively, the students were asked to indicate his/her willingness to pursue online studies from one side, then to reveal the way they perceive online education, the pros and cons, from another side. These perceptions are considered as part of the psychological readiness of the Lebanese student to make a shift from the classical type of education to the technological culture of learning. Such a readiness reflects “an individual’s state of mind in terms of being ready for e-learning” (Coopasami et al. 2017, p. 302), and is considered as a critical factor that could either impede or drive success of any online program. The earlier quantitative analysis on e-readiness, supported by detailed qualitative analysis on psychological readiness of the students, should give an unambiguous and clear understanding on the status of Lebanese student pertaining to readiness and acceptance of online education.

Results will help to triangulate data on prospects and barriers, compare data to old existing data from Lebanese literature and derive new findings that would be considered as valuable contributions. To analyze students’ responses, thematic analysis took place to derive the prospects and barriers

Prospects:

Analysis led to the formation of two key themes Prospects and Barriers, and a number of sub-theme components and codes. The perceived areas of strength in online modes of delivery among the students is: A- Academic Performance, B- Personal Development, C-

Perceived Usefulness, D- widens access to education, E- Technical Skills, demonstrated in the below Table 4.17.

Key Theme	Theme	Sub-Themes	Sub-Theme Components	Codes
Prospects	Students	Academic Performance	Efficiency in Studying	Organized Learning
				Clear Instructions
				Access to Resources
		Personal Development	Professional Skills	Time Management
				Adaptability
			Self-Regulation Skills	Self-dependence
				Maturity
				Managing Stress
		Perceived Usefulness	Career	Career Advancement
				Balancing Life Requirements
			Cost-Effectiveness	Transportation Fees
				Tuition Fees
			Academic Choices	Programs
				Institutions
				Countries
			Access to Education	Rural Areas
				Traditional Societies
				Entrepreneurs
		Technical Skills	Proficiency in Technology	Confidence in online communication
				Competency in Using Computers
			Chances of Success	Graduate Studies
				Reputable Universities

Table 4.17: Student Prospects Components

A-Academic Performance:

Defined as reaching significant achievement gains in grades and marks, academic performance was linked to better efficiency in studying. The reported advantages in efficiency in studying habits occurred in abundance rather than merely, and was a product of organized learning, clear instructions and access to resources.

Many students expressed their preference for organized presentation of topics and chapters and easy navigation between lessons that would help while studying, hence, enhancing productivity of learning.

- *Information is presented in a precise way*
- *It saves time, organizes lessons and chapters and saves space.*
- *You would have the material clear, and I believe it increases the effectiveness of my learning*
- *Knowledge is more systematically presented.*

Among the enunciated benefits of online learning is clear articulation of deadlines for submissions and exams, giving students ample of time to get ready and submit valuable work.

- *There is accurate clear deadlines and due dates that is easy to access whenever needed.*
- *The expectations are clear, we are not lost on what we should do.*

Access to resources: Exchanging knowledge with peers through blog and forums, and accessing different websites, tutorials and other sources of data appeared to not only enriching the learning experience, but also providing the students with extra exercises and chances to learn more and correct possible misconceptions. Hence, it leads to meaningful learning.

- *We would have large access to wide range of information*
- *Wide range of resources/access to teachers and students*
- *Possibility for interaction with other students through online blogs and forums*
- *It's very practical as a large number of people already spend most of their time online and it allows them to have more access to much more information*

B-Personal Development:

Defined as the life-long skills that are acquired during the period of studies to maximize their potentials and help them in leading successful future. These skills are not taught rather acquired, and this feature was distinguished in student responses along two levels, professional skills and self-regulation skills.

Professional Skills: Respondents revealed a number of skills that online learning is capable of fostering in students, namely, time management and adaptability with the new learning situation. Students revealed that online education can help them develop efficient time management skills, so that they distribute their time wisely into learning the material, studying and submitting assignments, and do other activities that are of interest to them.

- *I can manage time more efficiently, and study anytime, anywhere.*

Some students confirmed that being exposed to advanced teaching methods has the potential to teach them adaptability, and how they should regulate their habits to match requirements.

- *Some gathered skills are not learned in regular university and classes, for example to adapt to the new learning system and still perform high.*

Self-Regulation Skills: Respondents pointed out to a number of self-regulation skills that are achievable through online education, namely maturity, self-dependent and managing stress.

Responses revealed that online education can help students become more mature through being responsible learners and taking charge of their own learning.

- *It teaches responsibility, where the student controls his learning.*

Self-Dependence appeared as an important feature that helps students to become independent in their learning styles that would help them in return become self-regulating, maximizing their interpersonal skills.

- *Independence, you are more dependent on yourself to learn and study.*
- *Self-dependence and development*

Many of the students indicated that online education enables them to undergo certain activities they find interesting and entertaining, such as a hobby or leisure activities that would help them in better managing stress.

- *I can go to the gym and do other activities that are important to manage stress and pressure*

C-Perceived Usefulness:

Defined as the capacity of online instruction to respond positively to the merging needs of students given changing markets, and economical, sociological and cultural context of the nation. Four components were identified, namely: career, cost effectiveness, academic choices and access to education.

Academic Choices: Students revealed that one strong feature of online learning is the fact that a student can do smart choices in deciding on the kind of degree or studies he/she want to pursue, the choice of university to enroll in and country. Current education system seems to be hindering students' academic choices and aspirations, by choosing near-by universities, or available programs. For instance, their preference might be a major or certificate that is either not available in Lebanon or offered by a reputable university abroad that the student can't reside in for some reasons. Accordingly, online education can result in improved deliberate choices.

- *I can enroll in variety of degrees and certificates that are not available in home country.*
- *I would like to pursue online degree, especially if it was offered by an international reputable university, while I am in Lebanon working.*
- *More options of studying, as I won't be limited by the universities close by.*

Cost-Effectiveness: This feature emerged as affordable tuition fees compared to campus learning, in addition to resolving the issue of expensive transportation services in Lebanon.

- *Lower cost*
- *More affordable*
- *Saves cost and waste of money*

Respondents surfaced the difficulties they face in transportation, where due to high cost of transportation services and subsequent feasibility, they resort to close universities in distance.

- *It saves the hassle of finding a good transportation mean that is also affordable.*
- *No transportation fees and problems.*

Career: This factor was demonstrated in the career advancement, ability to obtain job while studying, and Graduate studies, study at the Masters' level while working. Advancement in career was repeatedly mentioned, as many students revealed that online learning can serve professional purposes like obtaining a job and growing in that job without affecting their studies and achieving success in both.

- *It serves professional purposes, where I can get a job and study.*
- *It gives me the opportunity to succeed in both in work and studying at the same time.*

Many of students confirmed that online education allows them to continue their education and proceed towards graduate studies, despite leading a full-time career job.

- *I can be studying for my Masters' degree, while working, where I can do it easily using my own time management.*
- *Pursuing higher degrees would become an option, without wasting time.*

D-Access to Education:

Defined as the opportunity to facilitate access to education. The respondents confirmed that convenience and flexibility as a result from learning online, would widen access to education

across the nation. Of particular interest groups were people living in rural areas suffering from poverty, or closed and traditional societies, and entrepreneurs.

- *Wide access to education*
- *People from far and remote towns can still learn and have a chance to obtain a degree*
- *No distance or time barrier to access knowledge for people who chose to work*

E-Technical Skills:

Defined as demonstrated strength in the usage of technology and technical skills, proficiency in using technology among the vast majority of students was depicted. Responses brought about confidence in online communication and competency in using computers.

Confidence in online communication: Students expressed embrative attitude to communicating online:

- *More practical, we live in digital age, communication is easy and part of our day-to-day activity*
- *I like notifications and reminders*

Frequent usage of computers and Internet was also demonstrated:

- *Easy, fast and efficient technology with Internet and laptops*
- *it's very practical as a large number of people already spend most of their time online and using computers*

Barriers:

Key theme Barriers was presented as the perceived doubts raised by the Lebanese students, while 7 themes emerged namely, A-Academic Rigor, B-Social Influence, C-Ease of Use, D-Personal Characteristics, E-Applicability and F-Finance.

Key Theme	Theme	Sub-Themes	Sub-Theme Components	Codes
Barriers	Students	Academic Rigor	Standards	Learning Outcomes

				Isolated Learner
			Collaboration and Interaction	Learner - Learner
				Learner - Faculty
		Social Influence	Market Acceptance	Job Attainment
		Ease of Use	Familiarity with E-learning	Predispositions
				Increased Workload
			Technicalities	Internet Connection
				Electric Power
		Personal Characteristics	Self-Regulation of Learning	Commitment
				Motivation
			Resistance to Change	Faculty Guidance
				Textbooks
		Applicability	Major/Program Dependent	
		Finance	Financing Power	Laptop Purchase
				Internet Connection

Table 4.18: Student Barriers Components

A-Academic Rigor:

Defined as thoroughness of content and perceived high expectations among students, doubts were expressed in the quality of online teaching/learning taking place compared to face-to-face instruction. Particularly in this feature was demonstrated in standards of courses and collaboration and interaction.

Standards: Referring to the standards of excellence in content and teaching, students doubted the quality of learning outcomes in terms of incorporation of high order thinking skills and sophisticated content knowledge.

- *Reading/memorizing something of the screen is not like attending a lecture with faculty*
- *Less higher order thinking skills in online learning compared to real classroom with students and instructors*

In addition, isolated learner was another fear among the student to doubt standards of learning, as some subjectivity might be taking place in learning that can leave student isolated without noticing of his/her misunderstand.

- *Too much of subjectivity, where student is left alone to learn, and sometimes he might understand wrong.*
- *Lack of faculty support*

Collaboration and Interaction: Described as the social interactions happening during learning tasks inside the classroom set-up. Responses reflected perception of limited interaction as one of the main contrasts between campus learning versus virtual classes and distinguished between learner-faculty and learner-learner social interaction. Majority of students linked the kind of interactions happening between peers, i.e. learner-learner interaction, to the socialization aspect of universities and physical classrooms. They are looking for one-to-one humane interactions either with professors or with peers. Accordingly, the absence of physical socializing over learning through the web brings about an important concern among Lebanese students taking the questionnaire.

- *Online education is more practical, but you miss out on socializing and the actual contact with people.*
- *The one-to-one human interactions (student-professor or student-student) are non-existent. This makes online degrees not regarded as serious enough and effective as the standard studying, where physical attendance is required.*

Another vital form of communication is between the student and faculty. Many students conformed the absence of learner-faculty interaction as a negative aspect of online education and was linked to quality of delivery, that would in return affect their behavior intention to either choose to enroll in online classes or not. Lebanese students taking the questionnaire favor live and face-to-face interactions with faculty, over hearing it from asynchronized streaming and computer. They perceive it as more effective and worth of value.

- *No interaction with the instructor*
- *No live interaction with instructor and the ability to get the most out of the chat*
- *I prefer live interaction with my teacher. I find it more effective if a professor delivers the information and not a computer.*

B- Personal Characteristics:

Defined as student characteristics that play an important role in the success of a student taking online classes, demonstrated through self-regulation of learning. Dominating features indicated weakness in the self-regulation skills of students and resistance to change

Self-Regulation Skills: Majority of students conveyed that despite how meaningful learning is through virtual environments, the convenience and flexibility nature makes it hard to students to stay dedicated and motivated to complete assignments and tasks. Commitment took the form of distraction, as students might easily get distracted through frequent usage of web technology.

- *I can learn from home, but I have access to other websites which could be distracting*
- *Not being able to commit because of all the distractions at home so less focus*
- *Students can easily get distracted online*
- *No self-discipline to stay concentrated*

On the other hand, lack of motivation in terms of persistence to complete task in the absence of faculty presence surfaced.

- *Absence of fixed schedules and physical interaction would make the student less motivated in learning.*

Resistance to Change: This attribute could be easily distinguished across majority of responses, characterized by preference for direct guidance by faculty, over utilizing personal skills to study and the tendency to take notes over textbooks, and highlight statement gives students the pleasure of learning and studying.

- *I prefer studying under direct guidance of professors*

- *I like to highlight and write notes on my textbooks.*

C-Social Influence:

Defined as subjective social norms affecting the wide acceptance of online education among employers and CEOs, this feature emerged through market acceptance of online education.

Market Acceptance: Among the expressed doubts where fear that graduates of online degree holders will be at disadvantage upon applying for jobs, where market prefers campus learning and traditional degrees.

- *If it will help us in our professional future and employers accept it, I will take online classes*
- *What if it was recognized by HR and employers want classical degrees*

D-Ease of Use:

Defined as the expected level of efforts required to study online, this aspect was linked to familiarity of the students with e-learning technologies and possible technical difficulties.

Familiarity with E-Learning: This factor was linked to student predispositions on e-learning technologies and increased workload.

A number of respondents revealed lack of familiarity with e-learning technologies, hence, its functionality presents as a strong fear and worry in its usage.

- *Online learning would be beneficial if the student knows how to deal with the software.*
- *E-learning proficiency is a must in this field.*
- *Many might not be familiar with the technology used*
- *Many might be familiar with related software, so it would be scary to take online classes*

The total reliance of online education on the advances in e-learning technology appeared to be a worrying factor for students, that would result in increased workload and associated pressure, rather than simplifying learning tasks. Vast majority of concerns were a result of lack of understanding and experiences on the functionality and usage of online learning software and modalities.

- *Increased efficiency and effectiveness, but not always used towards its goal, because it will result in big workload and pressure*

Technicalities: Defined as technical difficulties in power and that would challenge completing learning tasks. The unambiguous fact in Lebanon that the country suffers from poor electric power, slow Internet speed and loyalty of Internet connections, were also reflected in the capacity of student to take online learning seriously. This factor was linked to the quality of Internet connection and electric power in Lebanon.

Many students described the quality of Internet connection in Lebanon as slow and not reliable, which might leave tasks learning task unattended, making it hard to take online classes.

- *Electricity and Internet are not stable in Lebanon.*
- *Internet connection problems are the main disadvantage.*
- *Internet is very slow in Lebanon.*

In a similar manner to Internet lines, respondents confirmed the poor quality of electric power, where houses not equipped with alternatives would present a major challenge on student to enroll in online classes.

- *Lebanon suffers from a big electricity challenge.*

E- Applicability:

Defined as feasibility of implementation of online education in all programs and fields, this factor was linked to limited applicability that is major/program dependent.

Major/program Dependent: Some students communicated limited applicability of online learning environments, that wouldn't include fields like graphic design, medicine and patient care are better face-to-face.

- *It doesn't fit all fields, on site practice is hard to be covered online, especially in healthcare. Direct patient contact is more reliable.*
- *It doesn't work in my field like Graphic Design, I need human interaction*

F- Finance:

Described as financial requirement related to the investment in technology, where this factor was linked to the need to have a strong financial power to be able to pursue online degrees to enroll in online courses.

Financial Power: The need to have an abundant financial power was associated with purchasing laptop and acquiring Internet connection that are both considered pricey in Lebanon, presenting as a barrier to online education. Respondents revealed that online learning might be more affordable compared to face-to-face instruction, in terms of tuition fees and minimizing transportation fees, however due to the heavy investment in technology, still it requires some financial power that large part among Lebanese can't afford.

- *Expensive technology tools such as laptop and Internet*
- *Cheaper but not all can provide.*

4.2.3 Study 1 Discussion of Findings

This part will discuss the findings from Study 1 in relation to broad international literature,

and that specific to Lebanese context. Mixed methods was employed, where data was first collected quantitatively, assessing the readiness of Lebanese students for online education, followed by qualitative data to explore willingness of student, then acceptance of online education by learners.

4.2.3.1 Triangulation of Data

The first level of analysis aimed at showing that the adopted e-learner readiness model of Alem et al. (2016) is applicable to the Lebanese context through factor analysis and reliability test, where e-learning readiness proved to be a function of 5 constructs, namely, self-competence, self-directed learning, motivation, financial and usefulness, leading to formation of Study 1 Model 1.

Findings from the qualitative part led to two themes, namely, prospects and barriers and a number of themes, sub-themes and codes under each key theme. Discussion of findings aim to triangulate data, through comparing quantitative findings against qualitative findings and literature review to derive the prospects and barriers towards adopting online learning systems.

Quantitative findings from student readiness were first cross checked and verified across perception and attitude of learners and to first provide general overview on acceptance of online learning among Lebanese students then the factors influencing their willingness, presented in Figure 4.4.

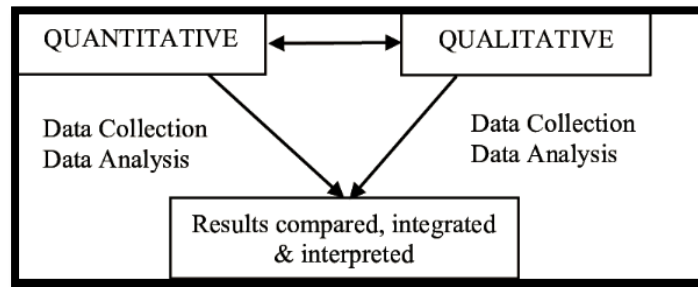


Figure 4.4: Study 1 Triangulation of Data

Student Readiness, Willingness and Acceptance

E-readiness is defined as the “level of development at which an individual is ready to undertake learning with specific hardware” (Alem et al. 2016, p. 194). Global student readiness is the “level of preparation a student needs in order to enroll and succeed without remediation in a credit-bearing programs at higher education institution” (p. 194). Students taking the survey showed adequate proficiency and confidence in using computer technologies, perceived usefulness of online education, possess the required self-directed learning skills, able to overcome technical difficulties to complete required online tasks, and have access to personal computers and Internet access. These aspects are considered as prospects in student readiness towards adopting online education systems. Perceived usefulness of online education, and proficiency in using technology and computers attest Tarhini et al. (2013) results in their study on factors affecting student acceptance of online learning in Lebanon, where researchers confirmed that among the significant contributors to student attitude is the perceived usefulness, perceived ease of use, the social norms and quality of work life. The ability to overcome technical difficulties, possessing the necessary self-directed learning skills, and significant barriers in terms of knowledge and confidence

in using online software, commitment to complete online learning tasks and financing power are considered relatively new results in the context of Lebanese literature, hence, counted as findings brought forth. Looking at the Pre-Study model that was developed from all literature that took place in Lebanon around online education, that basically covers faculty, leadership and other academic staff, however, only one study conducted by Tarhini et al. (2013) reflects fundamental data on motivations and reported challenges pertaining to student perception, skills and needs. Therefore, these results and findings are considered as critical in the field of advancements in online education in Lebanese HEI.

Total readiness concur with Coopasami et al. (2017) results, knowing that the latter relied on Chapnick (2000) model.

Global Acceptance of Online Education by Students

Regarding Lebanese students' attitudes and perception, data analysis indicated increasing acceptance of online education among Lebanon students, where despite the absence of all legislative policies and laws embracing distance learning, students show embrative attitude towards web-instruction. Tarhini et al. (2013) reached similar findings, declaring that online education is well accepted in Lebanon, and implementation should focus on the social aspect rather than technical and technological acceptance, attesting the findings of current research understudy. Compared to international literature, the demand is not as frequent, where in the US for instance the demand for online courses has outpaced face-to-face instruction courses, and enrollments were growing at an accelerated rate (Allen & Seaman 2010; Mann and Henneberry 2012). The 2017 Best Online College Programs, reflected such a rise clearly,

where many of leading universities in US, have acceptance rate in their online programs that are higher than on-ground programs and campuses, such as Pennsylvania State University, Washington State University, Arizona University, etc. (Friedman 2017). These universities have online programs that are more competitive than their classical colleges and programs. Nevertheless, these results that are particular to the Lebanese context converge towards another international supporting line of research that reflect empirical evidence on the attitude of learners that are of similar acceptance levels (Matsunaga 2016; Waigandt and Whittaker 2005; Lou et al. 2006; Mann and Henneberry 2012). Despite the low demand compared to US, yet it is better than some other Arab countries, where the current findings are not in line with Sadik (2016), where Egyptians view online degrees as inferior to classical forms of education, and degrees are not similar in terms of credibility and quality. A number of reasons could explain the discrepancy, first, online education is already accredited in Egypt, and some universities might have abused such forms of education to increase their student enrollment over the cost of quality, which was basically the main worry of the Ministry of Education and Higher Education in Lebanon, is in depriving degrees from their quality, the more online programs are accredited. The other possible reason is the fact that among the surveyed, were not only students but market and industry employees who once were students, unlike this research study that solely focused on the students and generated an acceptable acceptance.

Access, Pricey Technology and Financing Power

In order to benefit from online learning, an individual “should have a Personal Computer (PC) and an Internet connection or other network connection” (Hung et al. 2010, p. 1083).

Quantitative findings showed that students have general readiness in terms of access to personal computer and Internet which is considered as a prospect, however, the barrier lies in financial difficulty where absence of technology funding in case not personally provided such as computer loan, or borrowing money, etc. To confirm difficulty in financing, once not available, financial difficulty across qualitative findings was depicted and acknowledged among students at level of tuition fees and the need for investing in technology to engage in such modes of delivery.

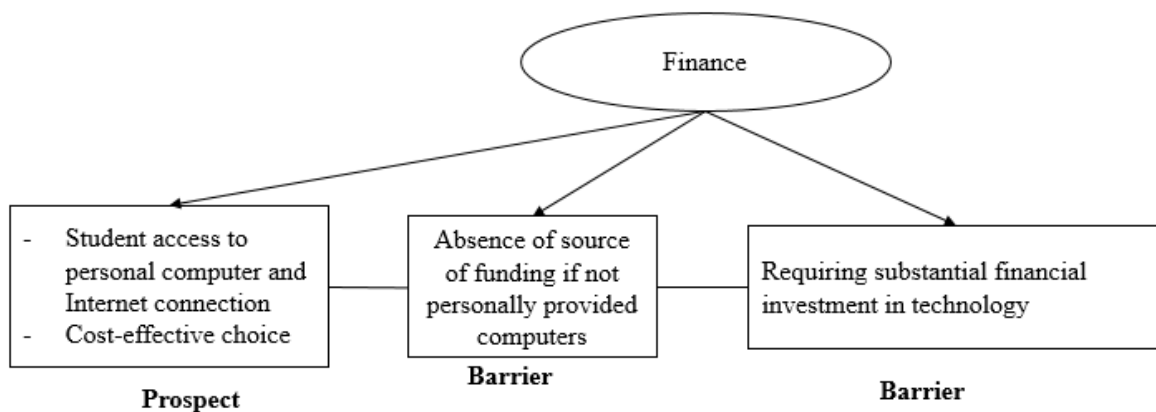


Figure 4.5: Findings on Student Finances

Such results show that the participating Lebanese students consider online education a cost-effective choice compared to campus learning, however the financing power remains a problem as the technology used require substantial investment in acquiring a laptop, good Internet connection and consistent electric power (Figure 4.5). Thus, it could be argued if institutions managed to offer online courses at reasonable prices, given how new the e-learning market in HE is, and provide the required financial support, that should most likely induce better acceptance and recruitment. The issue on pricing of online education and the degree to which online courses are cost effective is not new, rather occurred as a major

appealing factor for American students enrolled in online classes in Yang's (2014) study. Similarly, Haghighi and Tous (2014) results confirmed that among the needs and expectations of Indian distance learners at Guilan University is substantial financial support in terms of financial aid to sustain enrollment. Readiness in access countered some of local literature such as Abu Chedid and Eid (2004) and Mirza and AbdelKareem (2011) indicating limited access to personal computers and Internet connections. One reason for such discrepancy is the fact that the participating students study in universities in Beirut, capital of Lebanon, the hub for all business and Lebanese economy, with relatively higher purchasing power than the rest of areas. Funding attest Alobiedat and Saraireh (2010) results that Jordanian students' positive attitudes to e-learning platforms is correlates to ability to purchase a PC computer or laptop. Researchers for long suggested to better understand students' behavioral intention to e-learning is through thinking from e-learner perspective. Among the main rationales to offer online degrees is making use of the flexibility and convenience of such mode of delivery to reduce costs, and in return should reflect on potential cost savings for institution and student (Alobiedat and Saraireh 2010; Mc Donald 2000).

Triangulation of data indicate that the discussion on pricing was also offered throughout the conducted interviews by one of the senior executive leaders of the first online accredited program in Lebanon, and another executive form another reputable university, as a significant factor in the choice of student to enroll. These discussions are reported at later stages and confirm the validity of the obtained results. At the level of literature specific to Lebanese context, financing power of the students and funding as a contributor to student's

acceptance and behavior intention wasn't reported earlier, and thus, it could be argued that the derived results are significant findings contributing to the Lebanese context on online education

Perceived Usefulness of Online Education:

Perceived usefulness is defined as the extent to which an individual believes the use of online education will produce better outcomes, and "if students perceive that the online learning system can help improve their performance, they are more likely to use online learning in their learning process" (Farahat 2012, p. 97). Data analysis led to the below diagram that summarizes results on this factor:

In the current research study, Lebanese students proved to be positive on the general perceived usefulness of online instruction on their learning and achievement, presenting as a prospect towards implementing online education. Qualitative analysis further confirmed quantitative results on readiness. The rising of student voices calling for adoption of online learning and acknowledging the possible role of online education in enhancing learning and achievement is surprising and present as a departure from state of norm in a country that doesn't believe in online education among its senior academic policy makers. Accordingly, perceived usefulness proved to be a positive determinant factor towards better acceptance and enrollment in online education. If efforts are put forth towards raising awareness of students on the variety of options offered by e-learning modes of delivery, and how could it possibly enhance their learning experience, then high chances of conversions might outcome.

The above results pertaining to the usefulness of online education and affecting readiness and acceptance of online education is very well supported across literature in general and Lebanese context in particular. Tarhini et al. (2013) confirm that perceived usefulness is among the most influential variables in speculating acceptance and attitudes of students towards enrolling in web-based learning systems. It deems important to mention that Tarhini's et al. (2013) study "is the first to find empirical support" (p. 57) for such relationships, however, no other studies exist to time, indicating the contribution of the results of the current research understudy to Lebanese context literature on student readiness and attitude. Results from different part of the world also confirm the same, where Odesch (2014) reflected positive attitude form Nigerian students towards online learning, due to ease of use and perceived usefulness, where the latter proved to be a significant predictor of behavioral intention of the student to take online classes. Pilli et al. (2014) found a strong link between the perceived usefulness of online education towards its usage and taking online classes among higher education students in Cyprus. Similarly, Farhat (2012) reached compatible finding with respect to Egyptian students. Therefore, the positive attitude and perceived usefulness of online education for Lebanese students lie in parallel with international literature.

With advancements of technology, many universities around the world are faced with severe challenges in adopting best scenarios of implementing online education systems, in that sense students' attitudes and acceptance must be acknowledged, otherwise "systems will most likely fail" (Al-Adwan 2013, in Pilli 2014, p. 169). In developing countries like Lebanon, the idea of online learning is still at preliminary stages, where issues as attitudes,

readiness, acceptance, and implementation are surfacing. Therefore, taking into account the need to clarify to the students the reflected usefulness before adopting any system, through being clear on expectations and limitations, is an important step. One way to achieve this purpose, is through promoting piloting chapters for completely novice faculty, and integrate blended learning approach, where face-to-face instruction is spaced out allowing for intensive blended of online learning.

Proficiency and Confidence in Using Computers

Quantitative findings revealed that student readiness was high in proficiency and confidence which is one form of self-efficacy in using computers and technology. Qualitative analysis further support quantitative findings, where students showed preference for the increased use of technology in learning and linked it to saving time, practicality, better efficiency through notifications, forming prospects at the level of readiness and attitude. Online learning requires extensive use of personal and technical skills in using computers and general software to be complete learning materials and assignments, including a set of behaviors to run, maintain and use computers and Internet. Research indicate that learners showing high computers and Internet self-efficacy tend to achieve better than those of low levels (Tsai and Tsai 2003), where student confidence in utilizing communicative technologies for learning purposes supported with adequate levels of proficiency in using Internet and other computer-mediated technologies is a must. In that sense, readiness in general computer proficiency levels is considered a prospect, Figure 4.6.

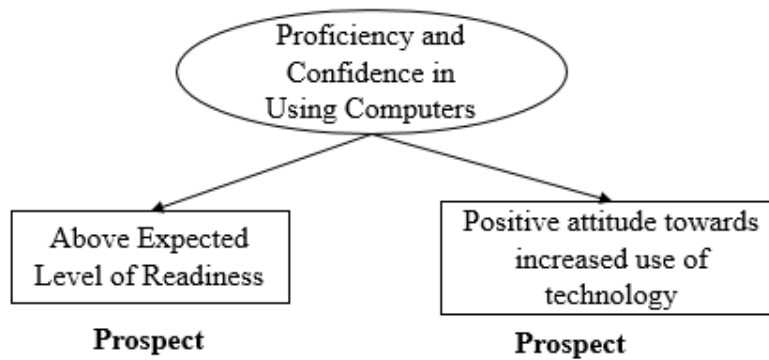


Figure 4.6: Findings on Proficiency and Competency in Using Computers

Understanding students' comfort levels in using technology and access to computers, not only help instructional designers in developing courses tailoring students' needs but also faculty in designing a rich and meaningful learning experience (Hung et al. 2010). Robust support systems could be developed and provided to the student pertaining to training and workshops, studying habits, etc. Counter to the Lebanese students' proficiency and levels of comfort in using technology, the South African students (2017) and Egyptian nursing students (Abdelaziz et al. 2011) proved to lack technological readiness. One reason for discrepancy in both characteristics may be that most of the respondents in this study were enrolled in private universities, where the financial capacity of the students is relatively higher than normal, and the universities are already integrating blended learning approach, or at least running e-learning platforms.

At the level of attitudes, Tarhini et al. (2013) derived similar findings, where the increased use of technology proved to be a predictor of student's behavioral intention towards online learning, of similar influence as perceived usefulness. Regional literature from Jordan, namely Khasawaneh's (2015), reached similar findings, where technology predispositions and self-efficacy in using technology affected student attitudes. The derived statistical results diverge from Coopasami's et al. (2017) findings from a quasi-experimental design conducted in South African university, that showed computers and laptops/computers are not readily available for students, whereas attests the lack of psychological readiness.

Therefore, it could be argued that readiness in terms of access to computers and confidence in computer-mediated technologies and Internet access proliferate among Lebanese students, supported by positive attitude towards the increased use of technology.

Overcoming Technical Difficulties

Getting hold of a laptop or computer and access to Internet connection is not enough to ensure smooth learning, as “although online instruction has many potential benefits, technical difficulties are one drawback to the increased use of this medium” (Sitzemann et al. 2010, p. 405). This study shows that Lebanese students participating in this study are able to overcome technical difficulties to complete required online tasks, indicating readiness in their capacity to learn despite interruptions encountered while interfacing with technologies and online software.

Research points out that proficiency in technology is not a product of performing mere Internet-related activities and tasks, such as send e-mails, accessing social media, downloading file, rather the ability of the learner to apply higher-order skills such as interruptive error messages, troubleshooting problems, etc. (Sitzemann et al. 2010; Hung et al. 2010). Lebanese students proved that they possess the required set of behaviors and skills that allow them to overcome such challenges. Technical issues appeared as source of frustration for students at tertiary education level, demonstrated through anecdotal notes in Gilett-Swan (2017) results, and similarly in Sitzemann et al. (2010), where it proved to be directly related to learners’ attrition during an online learning training session. Interruptions due to technical challenges reduce the efficiency of the performance of students, through expanding processing time of error messages (Zijlstra et al. 1999; Eastin and La Rose 2000; Sitzemann et al. 2010). Such findings appear for the first time in research studies around Lebanese context, and thus present as a valuable contribution.

Self-Directed Learning and Self-Regulation

Lebanese students proved, Figure 4.7, on average to exhibit the required self-directed skills relative to strategies used to manage their learning, such as prioritizing their learning goals,

how independent are they, claiming responsibility of learning, etc., presenting as a strong prospect.

Moreover, quantitative findings indicated lack of readiness at the level of motivation to complete tasks and online assignments given different kinds of interactions, among which is online distractions. Qualitative findings support both results, where students first showed positive attitude towards the ability to use and develop further their personal skills such as time management, self-dependence, and maturity, and related it to their personal development as a whole. Furthermore, they clearly expressed reduced commitment to online learning in the presence of distractions, and particularly two kinds of distractions were highlighted online and home distractions.

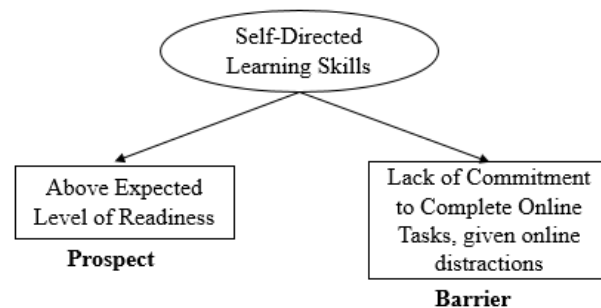


Figure 4.7: Findings on Student Learning

The nature of online learning environments is different than face-to-face where textbooks, notes, links and tutorial videos are available and student need to follow a linear sequence of events (Hung et al. 2010). Rather it allows for flexibility and freedom permitting the learner to select the content, quantity of material, and assign pace of learning, and hence are given more control over their learning experience and are encouraged to apply their personalized approached to their modes of studying (Hannafin 1984; Reeves 1993). At broader perspective self-directed learning is the extent to which the learner is able to direct his learning experience, knowing that being in control requires a set of self-directed learning skills that would either inhibit performance or maximize success. These results were also

confirmed in the qualitative part, where online learning is expected to positively influence students' personal development through development of professional skills, namely: time management, self-dependence, and maturity. Yet, readiness and positive attitude at such levels and skills are considered relatively new results in the context of Lebanese literature, hence, counted as findings brought forth. These findings disagree with Hung et al. (2010) where they pointed out that readiness among Taiwanese students was low in learner control and self-directed learning, and hence requiring special attention. Finding might have varied due to the nature of students taking the surveys, where online education has already been implemented and running in the site of study in Taiwan, and thus attitudes might have been affected by the student's online learning experience, such as bad practices from faculty or content design problems that is not appealing or organized.

Knowledge and Confidence in Using Online Software

Statistical results indicated lack of readiness in the knowledge and confidence in using online software, which wasn't surprising because even if the students are using Blackboard or Moodle, chances are low that they would know that is the same software used. Qualitative data confirmed the validity of these results, where lack of knowledge on the functionality of online learning and associated software used, presented as a fear and concern, impending adoption of online learning systems, Figure 4.8.

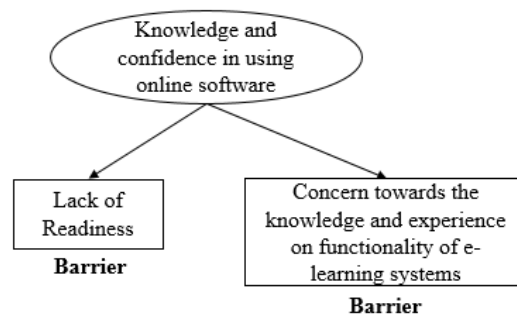


Figure 4.8: Findings on Familiarity with Online Learning

In order to the explain the above phenomenon, it is worth to look at the various conducted interviews with faculty who are teaching in blended learning format, demonstrating three main reasons: (i) first, the only public university to Lebanon, still to date doesn't have an e-learning system, from student information system to learning management system that would facilitate interaction among peers and with faculty, and sharing of notes and lectures, (ii) second, those students using e-learning software such as Moodle or Blackboard may not know that the same technology is used in online learning, (iii) and third despite the shift towards blended learning in big universities in Lebanon, faculty confirmed that the portion of online learning doesn't exceed 20 – 30% from total content, where the rest is campus learning. Most of the interviewees explained that the adopted online model in blended learning doesn't encourage students to study from distance and interact with online software, rather to complete and submit assignments. Therefore, lack of experience with e-learning systems for some universities and extensive blended learning could be attributed to the of shortage of knowledge on the functionality of online education in terms of technicality, and in that sense, it was expected that students wouldn't be familiar with online software and the vast options it provides the user with. Findings attest Nasser and Chedid's (2010) on the lack

of familiarity among Lebanese higher education institutions with distance education, which show that from 2010 to 2018, the picture didn't change much on the awareness of the Lebanese students on the scope, work and functionality of e-learning and accordingly, serious commitment should be expressed by senior stakeholders to overcome such a challenge, otherwise a risk on outdated higher education is threatening.

These results counter most of findings from studies coming out from different countries around the world where online education is accredited and up and running, such as Saat's et al. (2011) study on confidence and awareness of Malaysian students in using e-learning software, indicating their positive perception, yet its role was limited towards downloading lectures, Eldeeb (2014) findings on Emirati students confidence in e-learning.

Fear from Reduced Learner – Faculty Interaction

Reduced chances of engagement and interaction between faculty and students emerged as a strong barrier at the level of attitude, linking it to better levels of motivation, preference for direct guidance from faculty and high chances for compromised quality of delivery.

These findings concur with Smidt et al. (2016) analysis on the emotions of students enrolled in an American university upon institutional pressures to take online classes, where fears from levels of interactions proved to be overriding causing some reluctance among students to accept online education. Similarly, local literature attests these results where Tarhini et al. (2013) among suggested actions is to take include social context and students' perception of interaction to measures of attitude, so that the way students decide and choose to use and adopt e-learning systems could be better understood and described. The more advancement

in e-learning and the more it proliferates, attention is shifting towards the kind of interaction happening between students and faculty, where traditionalists and skeptics assure that face-to-face interactions take learning to a different level producing high learning outcomes (Bedeia and Lange 2007). Lebanese students show that their attitudes towards interaction lie within similar scope. Research suggests that “the biggest factor contributing towards a positive online learning experience has to do with the instructor” (Smidt et al. 2016). Among other different kinds of interactions, student-faculty interaction is different in virtual environments, where emphasis is on the faculty as mediator between student and e-learning systems and student and content (Beaudoin 1990). Faculty is encouraged to be highly aware of learning and cultural diversity of the students, and accordingly tailor tasks and assessment measures. In that sense students are motivated to overcome interaction challenges and accept e-learning environments. It is normal to perceive online learning as one way of instilling information and knowledge, from the source to the recipient, and in that case the source may be the technology itself rather than the faculty. The reality is if the course is well designed, where students’ abilities and fears are pronounced prior to starting, expectations are well expressed, and tasks meet the learning outcomes through a student-centered pedagogy, then online learning can be as interactive and meaningful as face-to-face. Furthermore, there is an increasing literature that suggests student-faculty interaction online can be more meaningful and productive, as it reduces chances of content misconception and misarticulation of expectations. In a study conducted on Finnish students participating in a hybrid course, Salmi (2013) concluded that students expressed positive attitude towards interaction with instruction, and that “face-to-face or even virtual oral interaction with the

teacher was not necessary if assignments and instructions were clearly formulated and feedback was well given” (p. 359). The personal meetings through office hours can take place over Skype or any other live video communicative tools, where feedbacks on assignments and experiences could be shared. What plays an important role in such a context is the accurate and useful feedback from faculty, along with well-designed and planned activities and tasks, and posting of information in a timely manner.

While in many circumstances such fear from students on levels of interaction is common, modes of delivery or mechanism might not be the most influential, rather the learning design and content itself. Although highlighted briefly earlier, a detailed account of student perception on learner – instructor interaction is the first time to be presented in Lebanese context.

Learner – Learner Interaction

A clear expressed concern in online education was the diminished peer interaction, pertaining to socialization aspect of universities and physical classrooms, impeding adoption of online education. Despite how appealing online education is, majority of students showing lack of acceptance and reluctance to pursue online degrees, linked their intention to perception of limited social interactions.

Findings on Lebanese students concur with international literature, as perceived learner - learner interaction has been viewed as an important indicator for taking online classes, where interaction positively correlated with student satisfaction and richer learning experience (Sher 2009). Accordingly, fears on socialization is totally justified, and perceived areas of

strength are the selling points of online education in the Lebanese context. The different levels and types of interaction, peer interaction, student – faculty, student – content, is a critical factor in success of the learning process in meeting its learning outcomes. Particularly, in online learning due the distance separating students and faculty in time and space, social interaction becomes noteworthy in the eyes of stakeholders and students. Advances in technology have enabled for increased levels and quality of interaction and engagement (Ballard 2009), yet literature confirms that students expect extensive social interactions and thus prefer face-to-face over online instruction (An & Frick 2006; Lapointe & Reissette 2008). Conceptions as such on increased interaction should be taken into consideration, and findings on high expectations on interaction for some group of students versus a pronounced fear for some other students meet both lines of international literature. The fact that students are online learners, with possibility of reduced face-to-face interaction, shouldn't be a dissuading factor to connect with classmates and network appropriately. Close bonds could be developed through a variety of ways, such as: live and synchronous sessions, where students undergo videoconferencing, with chances for real and personal relationships with other students and faculty, enhancing the whole learning experience. Second, encouraging the use of discussion board for assignments, where students can see each other's responses, comprehend well then respond back. Third, arranging for face-to-face meetings for networking or the purpose of study groups either on campus or elsewhere overseas. For instance, as expressed in interviews that would be discussed at a later stage, faculty engaged in the field trip that took place in Pro-Green Diploma, taking the students to various solar plants in UAE, allowed them to get to know each other closer, interact and share experiences.

Some, other universities around the world such as University of Florida host gatherings for networking purposes each year, aiming at bringing them together. Another important recommendation is engaging students in a learning community, which proved to be a retention incentive for women taking online degrees (Muller 2008). The social context of community intensifies the social presence, which in return would positively influence quality of delivery/learning, motivation to study and attitude towards the social aspect of online learning (Salmi 2013). Many platforms could be used as online teamwork tools such social media, blogs, chatrooms, etc. The most important factor remains in the nature of the tasks, where clear instructions on the purpose and scope of the activity, along with clear agenda, that stimulates proper planning and readiness from the students' side.

Allowing for Career Advancement and Leisure Activities

The convenient and flexible nature of e-learning was perceived as an added benefit for students, permitting them to carry on side jobs, and undergo activities they like such community service and practicing their hobbies. Therefore, Lebanese students show that online education helps them in their career advancement, and pursuing their hobbies and interests, presenting as prospect in attitude.

These findings also align with faculty perception, demonstrated in further sections, where among the expressed benefits of online learning in meeting students' needs, and supporting their career life, where it could be enhanced without wasting time, hence confirming validity of findings. Benefits of online education is the given opportunity to work and fitting student work schedule or hobbies/interests around coursework in an easy and flexible manner, which has been widely discussed in literature. For instance, a study conducted by University of

Illinois (Heap 2017) indicated that 44% of students reported career advancements, where by the time students graduate they would have accumulated professional experience and gained new skills that would help them to advance in their career. Such findings were also supported by the faculty and senior stake holder interviews, demonstrated in further section, implying that online education is a good fit for post-graduate studies, and particularly for doctoral students as suggested by the MEHE. These results concur briefly with El Turk and Cherney (2016) around the benefits of expanding educational offerings to non-traditional populations yet were brought up empirically for the first time in Lebanese literature, hence, considered as a significant contribution.

Quality of Internet Connections and Electricity

Data analysis led to identification of concerns in the areas of poor quality of Internet connection and inconsistent electric power.

Technical difficulties in terms of slow and inconsistent quality of Internet connections in Lebanon has been documented in literature as a primary obstacle that might impede adoption of online education (Abdelraheem 2006; Abu Chedid & Eid 2004; El Turk & Cherney 2016). Findings from Tarhini et al. (2013) about Lebanese students are also similar, the fear from increased use of technology affects behavioral intentions to take online classes, where perceived usefulness appeared to be a factor well. At the level of Jordanian students Khasawaneh's (2015) results are also similar, where the self-efficacy in using technology affects their behavioral intention. These findings relate to Quereshi et al. (2012) where poor electricity was found to be a primary impeding factor towards implementing online

education among students, and among other things, depriving the country from making use of technology advancements.

Improved Academic Choices

An important factor that emerged upon analyzing data is the perceived benefit of online education pertaining to diversified choice of universities to enroll in, as well as choices of degrees to pursue.

It is important to mention however that these findings wasn't in line with senior stakeholders perception collected through interviews, that would be elaborated further at a later stage, where MEHE assumed that Lebanon has all kinds of majors and degrees offered around the world, which might hold true for the common ones but not uncommon majors such as Aeronautical and Space for example, and unlike what another President and other seniors revealed that the proliferation of higher education institutions in Lebanon should cover students' needs. This fact holds untrue, as for instance majors such as Law can't be studied abroad and practiced in Lebanon, and earlier interviews also showed a need for online law majors, as well as nursing. These results appear in Lebanese literature for the first time, contributing significantly. In addition, such findings are supported by University of Illinois, where "where to study" (Heaps 2017) and "what to study" are deciding factors that may limit the choices of the individuals, and increase the chances of shifting directions and majors due to such limitations. Therefore, increased academic choices present as a strong prospect towards adopting online education.

Resistance to Change

Resistance to change “shows the degree of negative attitudes towards the use of technology” (Quereshi et al. 2012), articulated through the preference of some students to taking notes and highlighting papers in books, preference for direct guidance and motivation through faculty presence. It occurred as one form of dependency on faculty presence in the classroom and subsequent frustrations that it may cause if learning is shifted online. Therefore, although willingness is demonstrated to take online classes, resistance to change is still persistent among some student, which was expected.

Research suggests that new conceptions are most likely intimidating and would cause resistance and repulsion, especially if the norm for long was environments embrative of always face-to-face instruction. In that sense, “students perceive the classroom as the most appropriate place for teaching and learning” (Andersson & Gronlund, 2009 in Quereshi et al. 2012, p. 315).

Therefore, any shift to the asynchronous mode of delivery would most likely lack comfort, and has to be implemented gradually, through blended learning approach in very theoretical courses, then widens the scope of courses to cover practical and those offering experiential learning. Unlike Pakistani students, where students were positive, and resistance to change wasn’t recorded, in Lebanon this feature is still existing among a number of students despite, the general positive attitude.

Overcoming Transportation Problems

Many students indicated that commuting and transportation challenges impeded enrolling in a first university of choice, and hence, the nature of online education present as a prospect

in resolving transportation issues.

This aspect was highlighted in El Turk and Cherney (2016) in the capacity of virtual learning to solve commuting, distance and time issues, and other international literature such as Chi-Sing at al. (2008) on the attractiveness of this mode of delivery. It is considered to be a strong prospect, due to the increasingly high prices of fuel in Lebanon and lack of strong public transport, where students are either forced to relocate into expensive cities, or buy a car and finance expensive oil prices, and in either cases it is an expensive option.

Students Predispositions and Expectations

The students indicated preferences that are particular to the Lebanese student body presenting as either reluctance or motive to pursue online degrees, and in return are considered as either impeding or prospect factors towards adoption and implementing online education. Therefore, barriers are linked to reluctance to pursue online degrees at the level of undergraduate studies, limited fields of application and lack of market acceptance for online education, which would position e-learners at disadvantage compared to classical degrees. Prospect emerge in positive attitude of the students towards enrolling in online graduate studies, in universities that have proven records of standards and wide reputation. The issue of applicability of online degrees to certain programs only was also confirmed by the MEHE and demonstrated in the interviews part in earlier sections. It is not uncommon for students to be depersuaded on the increased load of work in online instruction and over reliance on personal skills and preference for post-graduate degrees, due to the proved lack of knowledge in the workability of online instruction, however, literature suggests that if students are organized and following up on timely manner, then chances are high that

workload wouldn't be dramatically increasing. The repulsive behavior of students to pursue undergraduate online degrees, and market acceptance could be understood from a lack of trust perception in the worth and value of online education.

Preference for graduate online courses is new in Lebanese literature, which would also be supported by senior executive stakeholders and Ministry of Education and Higher Education as later sections would show, indicate an agreement on feasibility although the Ministry was clear not to include majors requiring laboratory and clinical experience in such group. Similarly, market acceptance of online degrees has been offered in further interviews with senior executive leaders, where the main aim is that students holding online degrees not be at any disadvantage compared to campus degrees. Students concerns are important and converge towards international students concerns, where a study conducted by Fogle and Elliott (2013) from New York University, on market value and credentials of online degrees showed: (i) employers preferred campus degrees or hybrid modes as more credible compared to online modes across multiple industries, (ii) employers prefer candidates with background and experience in online experience, (iii) and third, articulated uncertainty about online degrees. Reputation of online university was also reported in different interviews to an extent that it was considered as motivational factor for students to enroll in ProGreen Diploma program, as it is offered by leading universities in Lebanon and the region. Therefore, if universities work on fulfilling the above, then better acceptance and enrollment may result. The role of perceived usefulness and market trend in accepting online learning lie in parallel with Tarhini et al. (2013) and Sahyoun (2014) respectively, whereas pricing

and how cost effective online courses are appeared as major appealing factors for students according to Yang (2014).

4.2.3.2 Study 1 Model

Integrating empirical findings with literature took place, through below matrix, Table 4.19, and leading to below Study 1 Model 2.

	Readiness Strength	Readiness Concern	Attitude Strength	Attitude Concern	Local Literature	Int'l Literature
Finance and financing power	X	X	X	X		X
Perceived usefulness of online education	X		X		X	X
Access, proficiency and confidence in using computers	X		X		X	X
Overcoming technical difficulties	X					X
Have the necessary self-directed learning skills and commitment to complete online tasks	X	X	X	X		X
Knowledge and confidence in using online software		X		X	X	X
Global willingness			X		X	X
Learner-learner interaction				X		X
Faculty -learner interaction				X	X	X
Quality of Internet connections and electric power				X	X	X
Productivity and distractions						
Resistance to change				X		X

Improved academic choices	X		X
Impact on developing personal and professional skills	X		X
Overcoming transportation difficulties	X	X	X

Table 4.19: Methodological Triangulation Results of Student Data

Data analysis of Study 1 started quantitative leading to development of Model 1 on prospects and barriers at the level of student readiness, then continued qualitative to pinpoint the degree of acceptance and factors influencing acceptance which brought about Model 2. Integrating above findings, lead to the development of the below **Study 1 Model 3** on the prospects and barriers to adoption of e-learning systems pertaining to student readiness and perception, Table 4.20.

Student	Prospects	Barriers
Readiness	Access to personal computers and Internet Connection	External Financing Power
	Proficiency and Confidence in Using Computers	Quality of Internet Connection and Electric Power
	Technical Skills	Commitment to Complete Online Tasks (Self-Regulation skills)
	Self-Directed Learners	
Perception and Acceptance	Increasing Acceptance of Online Education	Learner – Faculty Interaction
	Perceived Usefulness of OE	Workload
	Academic Choices	Fields of Application
	Attitude towards Post-Graduate Online Programs	Reluctance at the level of undergraduate studies
	High acceptance for Graduate Studies and	

	Reputable Enrolling Universities	
	Allowing for Personal and Career Advancement	Market Acceptance
	Overcoming Transportation Difficulties	
E-Learning Technologies		Familiarity and Confidence in Using E-Learning Software

Table 4.20: Study 1 Model 3

4.2.4 Global Readiness, Willingness and Acceptance Model

Through quantitative analysis of data, the five studied factors proved to be critical components of student readiness for online learning, and in return readiness proved to be significantly predicting willingness to take online classes. Therefore, this research study argues that self-competence, perceived usefulness, self-directed learning and financials are critical components of student readiness that influences willingness to take online classes, and the relationship is mediated by student acceptance of online education, that has been derived used qualitative modes of analysis, Figure 4.9.

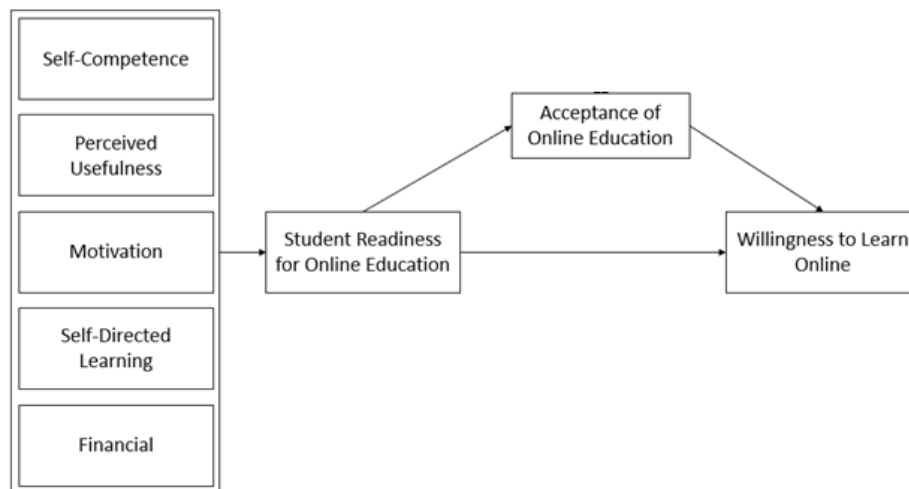


Figure 4.9: Readiness, Willingness and Acceptance Model

Furthermore, 2 additional factors appeared to influencing acceptance as well, namely the social influence and possibility of applicability of online education into all programs and majors, Figure 4.10.

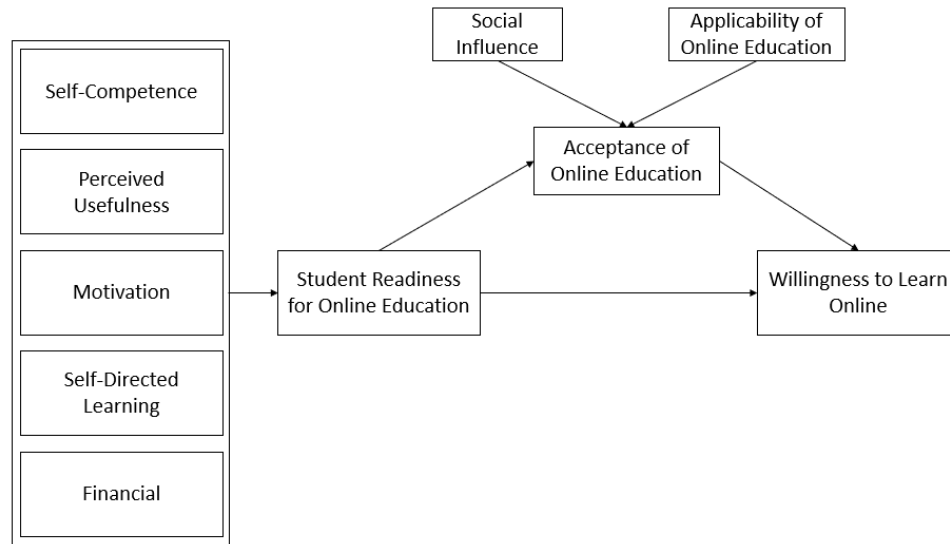


Figure 4.10: Expanded Global Readiness, Willingness and Acceptance Model

This model will be further tested quantitatively, in an another paper.

4.2.5 Summary

Mixed-methods modes of analysis took place in analyzing data collected for Study 1 on student readiness, willingness and acceptance of online education. Quantitative results showed adequate levels of readiness among the students to take online classes, where increased acceptance was demonstrated in willingness levels and personal perceptions, forming a major prospect. In addition, students found increased learning efficiency in studying online and opportunity for personal development. Barriers emerged in financing

power of students, reluctance for online degrees at the level of undergraduate, doubts in market acceptance, doubts in applicability of online education into all programs such as graphic design and labs and exposure to online learning software. The section ended with a proposed model that extended Alem et al. (2016) model on OLR, Online Learner Readiness, based on associations that were tested statistically and qualitative perceptions.

Next section aims at presenting the analysis of Study 2 on faculty readiness, willingness and acceptance of online education, that would end with a comparison with Study 1 findings through using Venn Diagram.

Level 2

4.3 Study 2 on Faculty Readiness, Willingness and Acceptance Findings

Mixed methods was employed, where data was first collected quantitatively, assessing the readiness of faculty in Lebanon for online education, followed by qualitative data where the research aims on further elaborating faculty acceptance of online education and their pedagogical readiness, as they proved to be widely controversial and connected to readiness. At this stage, perception was elicited through: (i) willingness of faculty to teach online, and (ii) the factors affecting their willingness. The will to take online classes and seek online degree is one form of behavioral intention that will reveal acceptance of online education among faculty, whereas the perceptions will convey their preferences and factors affecting their willingness. Data analysis aims at answering a set of research questions that would lead to deriving the prospects and barriers towards adoption of online learning at the level of

faculty. Particularly, it aims to answer the main research question from faculty side, the sub-research questions and hypotheses:

- **What is the Lebanese faculty readiness level to teach online and perception towards online teaching?**
 - What is the level of readiness to teach online among faculty?
 - How could the faculty acceptance of online education be described?
 - How compatible are the current adopted pedagogies with online education?
- **Test the Hypotheses:**
 - H4: There is relation of statistical significance between *Faculty E-Readiness* and *Willingness*
 - H5: There is a relation of statistical significance between *Faculty E-Readiness* and its components.
 - H6: There is relation of statistical significance between *Faculty* demographic variables and *Readiness*
 - H6a: There is relation of statistical significance between *Gender* and *Readiness*
 - H6b: There is relation of statistical significance between *Age* and *Readiness*

4.3.1 Study 2 Quantitative Analysis

- **Research Question: What is the level of readiness to teach online among faculty?**

This section will present the analysis, findings and discussion from the data collected on the faculty e-readiness survey that was circulated among faculty members teaching in Lebanese universities. The quantitative analysis will then be followed by qualitative analysis of answers on the short questions on the surveys.

The Statistical Package for Social sciences (SPSS v. 20) was used to analyze data and draw findings. The below section will present the demographic data of respondents, followed by descriptive statistics of the quantitative analysis of faculty members' readiness to teach online classes. Discussion of findings will then take place in the light of international literature.

4.3.1.1 Demographic Data of Respondents

A total of 94 respondents took the faculty readiness survey. The findings on demographical data is displayed in the below Table 4.21. The job titles of the respondents varied between instructors, teaching assistants, assistant professors, associate professors or full professors. Around 69% hold a PhD degree, whereas 28% have a Masters' degree and 3% only undergraduate degree. Most of the faculty, around 40% specifically, who took the survey belong to an age group of 47 years and above. whereas 36% are between 36 and 46 years, and only 23% are less than 35 years old. The largest group of respondents were females, around 54% and males 46%.

	Rank	Age	Gender	Teaching Experience	Online Experience	Academic Qualifications	Job Status	Nation- ality
Instructor/Teaching Assistant	60 63.8% 34							

Assistant/Associate/Full Professor	36.2%							
Less than 25 years		0						
		0%						
25 – 35 years		23						
		24.5%						
36 – 46 years		34						
		36.2%						
47 or above		37						
		39.4%						
Male			43					
			45.7%					
Female			51					
			54.3%					
0 – 2 years				4				
				4.3%				
2 – 4 years				5				
				5.4%				
4 – 6 years				11				
				11.8%				
More than 6 years				73				
				78.5%				
None					73			
					78.5%			
1 - 2 courses					9			
					9.7%			
3 - 4 courses					1			
					1.1%			
More than 4 courses					10			
					10.8%			
PhD Degree						64		
						68.8%		
Master's Degree						26		
						28%		
Undergraduate Degree						3		

						3.2%		
Senior Management							15	
							16%	
Middle Management							7	
							7.4%	
Faculty							72	
							76.6%	
Lebanese								91
								96.8%
Non-Lebanese								3
								3.2%

Table 4.21: Findings on Demography of Faculty Respondents

The teaching experience also varied, where majority (79%) exceeded 6 years of teaching, 17% have between 2 and 6 years of experience, and 5% below 2 years. Most of the respondents showed minimal, if any at all, experience with teaching online courses. never taught online courses. Majority, around 79%, never taught any, 10% seemed to have delivered more than 4 courses, only 1% 3 to 4 courses, and 9% delivered between 1 and 2 online courses. The academic qualifications of faculty who took the survey varied, between PhD, Masters' and undergraduate holders, where majority have doctoral degrees (78%), and the rest have either graduate or undergraduate degrees (31%). Among those, only 24% hold management positions, while the majority are faculty. It is to be noted however, that 15% of this group are senior management, and their responses on the short questions will be merged/compared against the qualitative findings derived from interviewing senior executives form universities in Lebanon. Finally, 97% of respondents are Lebanese nationals, and around 3% of those taking the survey are non-Lebanese.

4.3.1.2 Factor Analysis

Palloff and Pratt (2011) faculty readiness to teach online classes survey was used, pertaining to the level of support that is the faculty is expected to need. The main aim of the survey was to obtain data on the readiness level of a group of faculty teaching in Lebanese universities. Particularly, it assesses the association between e-readiness and willingness to teach online and the influence of demography on e-readiness, from one side. In addition, the survey aims to uncover the phase of development that the faculty proves to be, that operationally, would allow for the creation of individualized training plan. Palloff and Pratt (2011) survey, published in *The Excellent Online Instructor: Strategies for Professional Development*, and gained wide reputation. Results will show whether the group of faculty who took the survey are well suited to teach online and are probably far advanced, or are likely to need some support for success in online teaching, or extensive training is needed as the instructor is not ready.

This survey provides clear data on the kind of intervention faculty requires to excel in teaching online, where e-readiness was a measure of four constructs, namely: technical skills, experience with online teaching and learning, attitudes towards online learning, and time management and commitment. Factor analysis was conducted in an attempt to identify the variables that appear to be clustering in a significant way. The 35 items of Faculty E-Readiness Survey were factor analyzed, Table 4.22, where all of the four factors properly loaded under vari-max rotation, with the minimal loading cutoff score considered to be ± 0.5 (Suliman 2001). The below table shows that the 4 factors successfully loaded. The factors scored .500 and above of varimax rotation, with 11 items loading under Factor 1, 7

items loading under Factor 2, 5 items loading until Factor 3 and 5 items loading under Factor 4. Eventually, 7 items were dropped scoring below the cut-off score of .5, namely: TS8, TS9, OE2, AT1, AT7, TM3 and TM4.

Therefore, compared to international context, faculty readiness to teach online is a measure of technical skills, experience with online teaching and learning, attitudes towards online learning and time management and time commitment.

Items	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
TS1	.500			
TS2	.601			
TS3	.694			
TS4	.772			
TS5	.785			
TS6	.695			
TS7	.689			
TS10	.571			
TS11	.542			
TS12	.639			
TM6	.535			
OE1		.553		
OE3		.780		
OE4		.803		
OE5		.670		
OE6		.610		
OE7		.571		
OE8		.669		
AT2			.500	
AT5			.504	
AT8			.763	
TM1			.801	
TM2			.761	
AT3				.573
AT4				.638
AT6				.618
AT9				.687
TM5				.575

Table 4.22: Factor Analysis Test Results

4.3.1.3 Reliability Test

Reliability test is the measure of internal consistency of items on a Likert scale questionnaire, with Cronbach alpha being the most commonly used technique to achieve this purpose. Following factor analysis and the dropping of 7 items, Reliability Test was conducted and showed high overall alpha Cronbach .843, Table 4.26, while that of Technical Skills factor, Online Experience factor, Attitudes factor and Time Management factor are .841, .826, .655 and .628. Therefore, the below table indicates that the global scale and factors are reliable, Table 4.23.

	Cronbach's Alpha	Number of Items
Overall	.843	28
Global Factor Technical Skills	.841	10
Global Factor Online Experience	.826	7
Global Factor Attitudes	.655	7
Global Factor Time Management	.628	4

Table 4.23: Faculty Readiness Scale Reliability Test

4.3.1.4 Readiness Criterion and Scores

The areas of assessment are scores on 1 to 5 scales, with total scores for each section. As indicated in the below table, Table 4.24, the questionnaire tests the faculty respondent on four different facets of readiness: technical skills, experience with online teaching and learning, attitudes towards online learning and time management. Technical skills category comprises 12 questions with total score of 60 points. Experience with online teaching and learning has 8 questions, with a maximum score of 40 points. The third category, attitudes towards online learning, assesses the faculty over 9 different items with possible score of 45 points. The last category, time management, comprises 6 items, 30 possible points. The total

score is computed by adding all achieved scores on each individual category, and then compared to the above table, to assess the level of readiness of the faculty member.

Faculty Readiness Scale	
1.	Technical Skills:12 items and 60 possible points
2.	Experience with Online Teaching and Learning: 8 items and 40 possible points
3.	Attitudes Towards Online Learning: 9 items and 45 possible points
4.	Time Management: 6 items and 30 possible points

Table 4.24: Faculty Readiness Score Criterion

As Pallof and Pratt (2011) mention, the “total scores are an indicator of the phase of development in which the instructor finds himself or herself, allowing for the creation of an individualized training plan to meet the needs at that phase”. The criteria for scoring is adopted from Pallof and Pratt (2011) as follows:

150 – 175 points = The faculty member is well suited to teaching online courses and the chances are high that the respondent is an expertise in online instruction.

90 – 15 points = The faculty member will most probably be needing some support to achieve success in teaching online courses and chances are high that the respondent appreciates online instructor.

Below 90 points = Faculty will need considerable training and support for success in teaching online and are probably a visitor or novice online instructor.

Score	Criteria	Total = 94	Percentage
< 90 points	Beginner Level	3	3%

90 – 150 points	Intermediate Level	85	90%
> 150 points	Advanced Level	6	6%

Table 4.25: Faculty Readiness Results

Results indicated that 85 respondents, Table 4.25, scored between 90 and 150 points, scores of only 3 respondents fell below 90 points, and 6 scored above 150. Accordingly, 90% of faculty members who took the test are at the intermediate level in terms of readiness for online learning and will need some support to excel and master online teaching. 6% of faculty members taking the questionnaires are considered to be at the advanced level and have high chances of delivering quality instruction. Nevertheless, there remains 3% scoring at the early beginner level, and will require significant amount of training and help to qualify to teach online courses.

4.3.1.5 Mean Scores of E-Readiness Items

To further analyze and reflect on the above results, this study will adopt Aydin and Tasci's (2011) e-learning expected level of an individual readiness for e-learning systems, which is identified as mean score of 3.40, Figure 4.11.

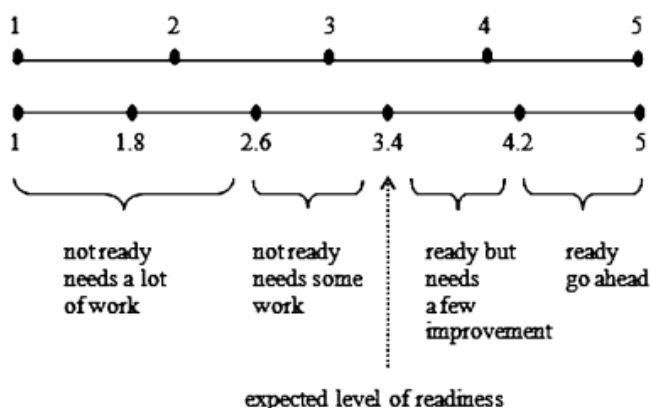


Figure 4.11: E-Learning Readiness Assessment Model

	N = 94	Mean	SD
	Technical Skills	4.216308333	0.947334167
1	I have a computer available to me at home and/or in my office	4.6383	.82763
2	I travel with a computer	4.0213	1.24416
3	I access the Internet frequently and can search the Internet for what I need	4.7234	.57556
4	I am competent in using e-mail	4.6277	.67177
5	I am competent in using word processing software such as Microsoft Word	4.5851	.75362
6	I am competent in using presentation software such as Microsoft PowerPoint	4.4468	.96850
7	I am able to download files from the Internet and attach files to an e-mail	4.6702	.75332
8	I am familiar with and can create a blog	3.3404	1.15984
9	I am familiar with and can create wikis	3.0106	1.26572
10	I am familiar with and can use social networking technologies, such as Facebook and Twitter	4.2872	.93467
11	I am familiar with the university's course management system	4.1277	1.05986
12	I have used technology to support my face-to-face teaching	4.1170	1.15336
	Experience with online teaching and learning	2.4481375	1.3880025
13	I have experienced at least one online course as a student	2.3085	1.57280
14	I have received training in online instruction	2.5319	1.51482
15	I have used online quizzes in teaching my classes	2.5532	1.38825
16	I have used online discussions in teaching my classes	2.6064	1.40060
17	I have used virtual classroom tools like Eluminate, Adobe Connect, WebEx, or Skype in teaching my classes	1.8936	1.12133
18	I have used chat in teaching my classes:	2.2234	1.36905
19	I have used publisher website in teaching my classes	2.4362	1.27472
20	I have used my university's course management system to support my classroom teaching	3.0319	1.46245

	Attitudes Towards Online Learning	3.784877778	0.93537
21	I believe that online learning is as rigorous as classroom instruction	3.1809	1.10680
22	I believe that high quality learning experiences can occur without interacting with students face-to-face	2.9043	1.21875
23	I support the use of discussion as a means of teaching	4.4574	.68258
24	I support learner-to-learner interaction and collaborative activity as central means of teaching	4.1489	.85456
25	I recognize that community-building is an important component of online teaching	3.6915	.92779
26	I encourage students to bring life experiences into the classroom and create activities that draw on those experiences	4.2447	.74323
27	I believe that lecture is the best way to convey content in my discipline	3.6596	1.11252
28	I feel comfortable communicating online and feel that I am able to convey who I am in writing	3.5213	.96974
29	I am critical thinker and can develop assignments that encourage critical thinking in my students	4.2553	.80236
	Time Management and Time Commitment	3.735815167	1.05171
30	I am able to log in to an online course at least once a day	3.053191	1.46182
31	I am able to post to my online class at least 4 to 5 times per week	2.9043	1.36050
32	I am able to manage my time well	4.2021	.78398
33	I am flexible in dealing with students' needs on such issues as due dates, absences and make up assignments	3.9787	.98351
34	I am fairly organized and tend to plan ahead in my teaching	4.0745	.85810
35	I am responsive to my students, responding to e-mail within 48 hrs and assignments within 1 week	4.2021	.86235
	Total	3.554909387	1.087505806

Table 4.26: Mean Scores of Faculty Readiness Scale Items

The mean scores of the items, Table 4.26, were distributed as follows: fourteen items out of total 35 scored significantly low or low, namely items 13, 14, 15, 17, 18 and 19 had mean scores below 2.6, while means of items 8, 9, 16, 20, 21, 22, 30, and 31 ranged between 2.6 and 3.4. These results show that on average, Table 4.27, the respondent lack fundamental readiness and will most probably require significant intervention to excel in online teaching relative to the following features: experience as a student in taking at least one online course, receiving training in online teaching or any form of professional development and the use of tools and technologies such as chats, forms of Adobe Connect and online quizzes as part of their classroom pedagogy.

Corresponding Score	Level of Readiness	Corresponding Items
Score between 1 and 2.6	Not ready, needs a lot of work	Items 13, 14, 15, 17, 18 and 19 (+ Total Experience Online)
Score between 2.6 and 3.4	Not ready, needs some work	Items 8, 9, 16, 20, 21, 22, 30 and 31
Score between 3.4 and 4.2	Ready, but needs few improvement	Items 2, 11, 12, 24, 25, 26, 27, 28, 32, 33 and 35 (+ Total Attitudes + Total Time Management and Commitment)
Score between 4.2 and 5	Ready, go ahead	Items 1, 3, 4, 5, 6, 7, 10, 23 and 29 (+ Total Technical)

Table 4:27: Faculty Readiness to Teach Online Results

Absence of readiness was also demonstrated in a number of skills, however some intervention is required rather than significant. Particularly, in the use of course management system and online discussions to support teaching, the perception that online learning is as rigorous and efficient as face-to-face instruction, and high-quality learning can't take place in a setting that where face-to-face interaction doesn't exist, i.e. over the web. Faculty time

commitment also showed lack of readiness in their capacity to log in into any online course every day, and post at least 4 – 5 times a week. General lack of readiness was obvious in the global experience with online teaching and learning variable, indicating lack of knowledge, awareness, familiarity and training with online education systems.

On the other hand, readiness to proceed in teaching online courses was high in global variable technical skills, and readiness with some support required in the other two global variables attitudes towards online learning and time management and commitment. Mean scores showed good levels of readiness with brief intervention only, in aspects pertaining to traveling with computers, familiarity with the use of course management system, using technology to support classroom learning, the need for active learner-learner discussions, encouraging students to bring to class their personal experiences and assignments promoting critical thinking. Moreover, faculty perceptions on the importance of community building to online education, whether lecturing is the best way to deliver and other set of personal skills such as faculty organization, time management and flexibility appeared at expected levels of readiness. Advanced readiness towards adopting online learning was expressed in the availability of computers at home and in office, competency using various Internet skills such as e-mails, Microsoft Office, social media, and the capacity to develop assignments promoting critical thinking. Among the most important findings is the perception of the Lebanese faculty that lecturing is not the best way to deliver and teach, and their prompt responsiveness in e-mail exchange and their confidence in their abilities to communicate effectively online.

4.3.1.6 Study 2 Faculty Readiness and Willingness Findings

In order to identify the relationships between the independent and dependent variables, and to further explore the degree of significance, the Pearson Correlation Coefficient test was conducted to test H4 and H5. Spearman's correlation test is one way to test hypotheses, with correlation coefficient is a "non-parametric statistic and so can be used when the data have violated parametric assumptions such as non-normally distributed data" (Field 2011, p. 179).

- **H4: There is relation of statistical significance between *Faculty E-Readiness* and *Willingness***

The below table, Table 4.28, shows that there is a positive correlation between the dependent variable Willingness and the independent variables Faculty E-Readiness. The relation is significant at the .05 level, with corresponding significant value of $\rho = .01$, yet the relation is moderate where the correlation coefficients is $r = .258$. These findings confirm the hypotheses H4, where faculty e-readiness contributes in predicting willingness of faculty to teach online. The readier the faculty for online education is, the better accepting he/she is to teach online.

Correlations		Global. Readiness	Willingness
Global.Readiness	Pearson Correlation	1	.258 [*]
	Sig. (2-tailed)		.012
	N	94	94
Willingness	Pearson Correlation	.258 [*]	1
	Sig. (2-tailed)	.012	
	N	94	94

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

Table 4.28: Spearman Correlation Test Results

Regression analysis was conducted, Table 4.29, showing that the coefficient of determination R^2 is .056 implying that e-readiness explains 25% of the variation in Willingness, while majority of variability is accounted by other factors. F-ratio is 6.552 that is highly significant ($p = .012$), indicating that there is less than 1% chance that such a value of F-ratio would occur, if a null hypothesis (H_0 instead of H_4) was true. The t-statistic value is 2.560 with a significance value accounting for .012. The value of $b_1 = .015$, representing “the change in the outcome associated with a unit change in the predictor” (2011, p. 208). Therefore, it could be concluded that, if the predictor variable faculty e-readiness is increased by one unit, then willingness will increase by .015, otherwise, “the probability of these t-values or larger occurring” (Field 2011, p. 208) is less than .05. Therefore, E-Readiness is considered to be a contributor towards predicting faculty willingness to teach online, the readier the faculty is for e-learning, the more willing and accepting he/she is to teach online.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.258 ^a	.066	.056	.81365		
a. Predictors: (Constant), Global.Readiness						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.338	1	4.338	6.552	.012 ^b
	Residual	60.907	92	.662		
	Total	65.245	93			
a. Dependent Variable: Willingness						
b. Predictors: (Constant), Global.Readiness						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.344	.643		-.536	.594
	Global.Readiness	.015	.006	.258	2.560	.012
a. Dependent Variable: Willingness						

Table 4.29: Regression Analysis Results

- **H5: There is a relation of statistical significance between *Faculty E-Readiness* and its components.**

There exist a significant, positive correlation between independent variables Faculty Technical Skills, Experience, Attitudes, Time Management and Commitment and global dependent variable Faculty E-Readiness, confirming H5, Table 4.33. Strong relations resulted with Technical Skills, Experience and Time Management and Commitment of corresponding correlation coefficients .709, .749 and .810, whereas moderate relation between Attitudes and Readiness of correlation coefficient .363. All these relationships are highly significant at the .01 level with $\rho = .01$. Therefore, H5 is confirmed and this study proved that these four factors are actual components of faculty e-readiness, and once they are fulfilled, an adequate readiness level to teach online should result. Strong significant relationships were demonstrated between Faculty Technical Skills, Experience, Time Management and E-Readiness, whereas moderate relationship was between Attitude and E-Readiness. This study proved that these four factors are actual components of faculty e-readiness, and once they are fulfilled, an adequate readiness level to teach online should result. Specifically, if faculty possess adequate technical skills, experience with online communication, positive attitude and have appropriate management of their time and commitment, then most likely readiness for e-learning would be high.

Correlations

		Technical. Skills	Experience	Attitudes	Time.Mng. Com	Global. Readiness
Technical.Skills	Pearson Correlation	1	.160	.052	.532**	.709**
	Sig. (2-tailed)		.123	.616	.000	.000
	N	94	94	94	94	94
Experience	Pearson Correlation	.160	1	.177	.460**	.749**
	Sig. (2-tailed)	.123		.088	.000	.000
	N	94	94	94	94	94
Attitudes	Pearson Correlation	.052	.177	1	.337**	.363**
	Sig. (2-tailed)	.616	.088		.001	.000
	N	94	94	94	94	94
Time.Mng.Com	Pearson Correlation	.532**	.460**	.337**	1	.810**
	Sig. (2-tailed)	.000	.000	.001		.000
	N	94	94	94	94	94
Global.Readiness	Pearson Correlation	.709**	.749**	.363**	.810**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	94	94	94	94	94

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

Table 4.30: Spearman Correlation Test Results

Moreover, the Beta weights in Table 4.31 indicate that Technical Skills explain 52% the variance in Readiness, whereas Technical Skills 48%, while Attitudes and Time Management account for 16%, and 27%.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.887E-15	.000		.	.
	Technical.Skills	1.000	.000	.476	.	.
	Experience	1.000	.000	.524	.	.
	Attitudes	1.000	.000	.157	.	.
	Time.Mng.Com	1.000	.000	.264	.	.

a. Dependent Variable: Global.Readiness

Table 4.31: Beta Weights for Faculty Readiness Components

To test for the associations between two demographical variables, gender and age, and readiness, independent-samples t-test was and regression analysis were used.

H6: There is relation of statistical significance between demographic variables and Faculty E-Readiness

▪ **H6a: There is relation of statistical significance between Gender and Readiness**

An independent-samples t-test was conducted to compare faculty e-readiness levels among faculty in relation to gender, female or male. Gender wasn't found to have significant effect on e-readiness, Table 4.32. A total of 43 males and 51 females responded to the survey, results indicate that there was no significant different difference in the levels of readiness between Males, $M = 107.31$ and $SD = 16.35$ and Females, $M = 107.27$ and $SD = 12.26$, where $t(76.70) = .009$ and $\rho = .993$ which is greater than .05.

Group Statistics

Gender of responder		N	Mean	Std. Deviation	Std. Error Mean
Global.Readiness	Male	43	107.3023	16.35257	2.49374
	Female	51	107.2745	12.26879	1.71797

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Global.Readiness	Equal variances assumed	3.945	.050	.009	92	.993	.02782	2.95621	-5.84347	5.89910
	Equal variances not assumed			.009	76.796	.993	.02782	3.02823	-6.00242	6.05805

Table 4.32: Independent-Samples t-Test Results for Gender and Readiness Variables

▪ **H6b: There is relation of statistical significance between Age and Readiness**

There exist a negative correlation between the independent demographic variable age of faculty and Faculty E-Readiness, Table 4.33. The relation is significant at the .01 level, with corresponding significant value of $\rho = .009$, the relation is moderate where the correlation coefficients is $r = -.267$. These findings confirm the hypotheses H6b, where age of faculty

contributes in predicting e-readiness of faculty to teach online. The younger the faculty is, the better levels of e-readiness he/she possess. These results are further confirmed with regression analysis test. Table 4.34 shows that the coefficient of determination R^2 is .061 implying that age explains 27% of the variation in faculty e-readiness, while majority of variability is accounted by other factors. F-ratio is 7.048 that is highly significant ($\rho = .001$), indicating that there is less than 0.1% chance that such a value of F-ratio would occur, if a null hypothesis (H_0 instead of H_1) was true. The t-statistic value is 2.067 with a significance value accounting for .04. The value of $b_1 = -4.801$, representing “the change in the outcome associated with a unit change in the predictor” (2011, p. 208). Therefore, it could be concluded that, if the predictor variable age is reduced by one unit, then readiness will increase by 4.801, otherwise, “the probability of these t-values or larger occurring” (Field 2011, p. 208) is less than .01.

Correlations		Global. Readiness	Age of responder
Global.Readiness	Pearson Correlation	1	-.267**
	Sig. (2-tailed)		.009
	N	94	94
Age of responder	Pearson Correlation	-.267**	1
	Sig. (2-tailed)	.009	
	N	94	94

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

Table 4.33: Spearman Correlation Test Results for Age and Readiness Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.267 ^a	.071	.061	13.76140

a. Predictors: (Constant), Age of responder

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1334.645	1	1334.645	7.048	.009 ^b
	Residual	17422.600	92	189.376		
	Total	18757.245	93			

a. Dependent Variable: Global.Readiness

b. Predictors: (Constant), Age of responder

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	122.404	5.868		20.858	.000
	Age of responder	-4.801	1.808	-.267	-2.655	.009

a. Dependent Variable: Global.Readiness

Table 4.34: Regression Analysis Results for Age and Readiness Variables

4.3.1.7 Study 2 Quantitative Model

The expressed levels of readiness could be summarized in the below **Study 2 Model 1**, Table 4.35:

Barriers	Prospects
Familiarity in creating blogs and wikis	Availability of computers at home and office
Experience in taking at least one online course as a student	Traveling with computers
Receiving training in online instruction	Familiarity and frequent access to Internet, e-mails, Microsoft Office, downloading and attaching files

Familiarity and use of online chat, online discussions, Skype or Adobe Connect and online quizzes	Familiarity on using course management system
Use of university course management system	Use of technology to support face-to-teaching
Perception that online education is as rigorous as campus learning	Pedagogies supporting learner – learner interaction, collaborative discussions, authentic learning and flexibility on students' submissions
Perception that high quality learning experiences can occur without face-to-face interaction	Confidence in communicating online with students, responsiveness in e-mail exchange, adequate time management, and organization skills.
Ability to log in at least once a day to an online course	Gender isn't an influencer
Ability to post 4 – 5 times a week in an online course	
Global variable experience with online teaching and learning	
The older the faculty, the less the e-readiness	

Table 4.35: Study 2 Model 1

These results reveal that the largest majority of the faculty members, around 96%, who teach in Lebanese universities and took the questionnaires are qualified to teach online courses with some intervention. Such findings are important, as it demonstrates that in a country where online education is banned from the public, the readiness level among faculty members and students seem to be adequate. Thus, such readiness levels among key stakeholders in the

higher education sector in Lebanon, presents as a strong prospect towards a policy decision on the adoption and implementation of online education.

4.3.2 Study 2 Qualitative Findings

- **Research Question: How could the faculty acceptance of online education be described?**

The first part of the analysis section aimed at showing that the adopted faculty e-readiness model developed by Parloff and Pratt (2011) is applicable to the Lebanese context through factor analysis and reliability test. E-readiness proved to be a measure of 4 constructs namely, technical skills, experience with online teaching and learning, attitude towards online learning and time management and commitment, and accordingly prospect and challenges pertaining to e-readiness surfaced. Qualitatively, the research aims first to elaborate faculty acceptance of online education and their pedagogical readiness, as they proved to be widely controversial and connected to readiness. At this stage, perception was elicited through: (i) willingness of faculty to teach online, and (ii) the factors affecting their willingness. The will to take online classes and seek online degree is one form of behavioral intention that will reveal acceptance of online education among faculty, whereas the perceptions will convey their preferences and factors affecting their willingness. Second, exploring the current pedagogical practices of faculty to understand how compatible they are with online modes of delivery.

4.3.2.1 Willingness to Teach Online

Faculty were asked to reflect on their willingness to teach online courses, supported with reasoning on their choices and preferences. A total of 71 responded, Table 4.36, showing around 76% response rate, revealing 47% indicated positive intentions, while as 20% were reluctant. Only 2% would consider blended teaching where online technologies would complement face-to-face instruction. Knowing that 47% is still below half of the faculty members count responding to this survey, yet it is the highest majority of faculty members agreeing on teaching distance courses, indicating a shift in the attitudes towards online education among instructors.

	Willingness to Teach Online Courses
Yes	47%
No	20%
Mix of online and face-to-face (Blended)	2%

Table 4.36: Faculty Willingness Results

4.3.2.2 Perception Towards Online Education

- **How could the faculty acceptance of online education be described?**

Qualitative means of analysis was used to reveal the perception of faculty towards online education and the factors affecting their willingness to teach online. Thematic analysis took place that led to the development of two key themes, Prospects and Barriers, Faculty as a main theme and a number of sub-themes, sub-theme components and codes.

Prospects:

Factors that showed be affecting the faculty acceptance of online education were, Table 4.37:

A- Self- Motivation and B-Usefulness for Students, 6 sub-themes namely: intrinsic motivation, self-improvement, learning efficiency, interpersonal development, career life and access to education, and a number of codes.

Key Theme	Theme	Sub-Themes	Sub-Theme Components	Codes
Prospects	Faculty	Self-Motivation	Intrinsic Emotion	Self-Gratification
				Desire to Take Challenges
				Proficiency in using Technology
				Blended Approach
			Self-Improvement	Technical Skills
				Pedagogical Skills
		Usefulness for Students	Learning Efficiency	Fast Learning
				Effective Learning
			Interpersonal Development	Self-regulation skills
				Professional Skills
			Career Life	Career Advancement
				Graduate Studies
			Access to Education	Under-Served Population
				Students with Disabilities

Table 4.37: Faculty Acceptance Prospects Components

A-Personal-Motivation:

Defined as the ability to do what needs to be done to personal desire, responses revealed that faculty are encouraged to teach online, due to intrinsic motivational reasons and self-improvement.

Intrinsic Motivation/Emotion: In this study intrinsic rewards highlighted by the faculty members to teach online courses, were linked to the sense of self-gratification, personal desire to take up challenges and confidence in technology proficiency, blended approach, far from any monetary reward.

Some faculty revealed how teaching blended courses would result in self-satisfaction of own desires.

- *I would like to see online learning as a complement to traditional learning*
- *Blended approach has proven to be an effective mode of delivery that is by far better than face-to-face.*
- *It is time to start teaching online, I need to.*

Other faculty considered teaching online classes as an opportunity to take on challenge tasks for personal reasons and satisfaction.

- *I believe through actual teaching of online courses, could I truly measure the effectiveness or otherwise of such an approach.*
- *Teaching blended courses is important for us as faculty, it is challenging, but we can't run away from it.*

Teaching online courses requires heavy usage and understanding of technology. Faculty responses indicated high levels of proficiency and confidence in using technology, and thus for many it took the form of intrinsic motivator to teach, despite being unaccredited.

- *I feel comfortable communicating online*
- *We are in the 21st century, everything is online, no geographical boundaries for education, the world is becoming a small village*

Self-Improvement: Defined as process of enhancing individual personal skills, faculty found in online education opportunity to strengthen their technical skills as well their pedagogical skills.

A number of faculty indicated the need to strengthen their knowledge and competency in advanced online communicative technologies and other forms of e-learning.

- *Opportunity for exposure to latest technologies in education*

In addition, another set of faculty perceived online teaching as means to enhance teaching skills, and adopt advanced pedagogies.

- *It enhances quality of teaching.*
- *The flexibility of such an approach is an opportunity to discover and enhance teaching techniques that could be brought into face-to-face instruction.*

B- Usefulness for Students:

Defined as usefulness of online education to meet students' personal needs, emerging at the level of learning efficiency, interpersonal development, career life and access to education. Among the most significant motivating factors to take the challenge and teach online courses, is the perception and conviction of faculty on the usefulness of such approaches in relation to students' needs. In this study, faculty members recognized the importance of greater flexibility offered by online education on developing students' interpersonal skills and allowing for career advancement

Interpersonal Development: These are the skills required to run a balanced and successful day-to-day tasks, that are not taught rather acquired. Faculty perceived online education as a tool that can teach students the self-regulation skills and maturity.

In a number of responses, self-regulation skills took the form of self-discipline and control over their habits that would help students to develop at the personal level:

- *Good experience, teaching students self-discipline to stay focused*
- *In that way students will learn how to stay focused in order to meet standards*

Many of the respondents as well revealed the importance of online education in learning skills that would help them obtain better job opportunities and advance faster, such as time management and organization.

- *In that way students would be forced to take manage their time properly, which will help them in their future careers.*
- *Students have to be organized to success they develop*

Career Life: Majority of faculty conveyed that online learning would help student's career advancement and pursue advanced graduate studies such as Masters or Doctoral.

Some faculty emphasized that there is a particular group of students, those are working and studying, attending online learning would support their career life, and enhance it without wasting their time.

- *Those who are productive and working, online education can push them and support their career.*
- *Through regular checkups and continuous communication with students, online learning can help them improve their career without wasting their time.*
- *Students have to be organized in studying and manage their time well in order to achieve success.*

Along same lines, faculty also revealed that many employees are busy with their tight schedules, online learning would help them to work towards Masters' degree or more.

- *For many working people seeking knowledge, these courses seem to be very convenient, to continue their education.*

Access to Education: Defined as the right of every individual to have equitable chances to study and pursue higher education degrees, this theme was linked to under-served populations and students with disabilities.

Under-served populations, these are groups or communities of people who are bounded to certain location or context, depriving them from the chance of commuting to campus. Many faculty revealed that online education would help these groups in accessing education services.

- *Yes, it is accessible and suitable for everyone especially some groups who can't attend campus due to remote location, poverty and other personal circumstances.*

Another group of learners that might take advantage of such learning modes are students with some kinds of disabilities who can't attend physically attend classes, online education can serve their needs and giving the right to learn.

- *It is good for students with disabilities*
- *Some students can't attend, like students with physical disabilities or suffering from medical conditions, can learn from their residence.*

Learning Efficiency: Defined as the ability to comprehend and understand material with least efforts, this factor appeared as a product of fast learning and effective learning.

Fast learning was pinpointed by some faculty and linked to the availability of online resources while studying, that helps students in controlling learning experience.

- *It can help generation to learn faster, through controlling their own pace*
- *Availability of resources make students learn fast.*

Other faculty indicated increased effectiveness of learning, through better access to knowledge and online material supporting learning process.

- *More availability of learning, where the versatility of such approach if brought to face-to-face can enhance learning experience.*
- *For some type of courses, it is better learning, because it enhances quality of learning*
- *The use of online material or communications means for assignments and extra readings make students learn better.*

Barriers:

Barriers and faculty were identified as key theme and theme, along with two sub-themes A- Student Benefit and B-Job Relevance, a number of sub-theme components and codes, table 4.48.

Key Theme	Theme	Sub-Theme	Sub-Theme Component	Codes
Barriers	Faculty	Feasibility	Student Self-Regulation Skill	Demotivated
				Workload
			Program Applicability	Programs
				Internet Connection
		Job Relevance	Academic Rigor	Knowledge
				Learning Outcomes
			Self-Confidence	Lecturing
				White Boards
			Image	Promotion
				Pay

Table 4.38: Faculty Acceptance Barriers Components

A-Feasibility

Defined as doubts in the practicality of implementation, that is linked to student self-regulation skills and applicability to all programs.

Student-Self Regulation Skills: Defined as the skills necessary to control attitude and behaviors related to learning and studying, some faculty revealed doubts in the level of self-regulation among students that would lead to demotivation and increased workload.

Responses revealed faculty perception that some groups among students might be at disadvantage in taking online classes, particularly those who don't show maturity and enough self-regulatory skills. In that sense, online learning can leave them lost, with many misunderstandings or misconceptions, and result in a demotivated learner. Faculty wouldn't be able to provide enough support to help such students due to the nature of online modes of delivery.

- *Teaching needs interaction between student and teacher, otherwise if student is not self-disciplined enough to manage learning, the student is left alone*

- *Students might feel lost causing low self-esteem*

Some faculty highlighted potential risks of increased workload on students due to the doubts in self-regulation skills of students and nature of online learning,

- *Weak students would feel lonely because of extra workload*
- *It is too hard on some students not doing well in their studies, the load of work is too much on them to handle*

Program Applicability: Defined as suitability for implementation into all fields and programs, this factor was linked to program and Internet connection.

Many of the participants confirmed that any positive impact of online learning would only be applicable in some courses and fields that are basically non-Scientific theoretical and not-practical.

- *It is not applicable in Math.*
- *In Math we need to discuss face-to-face*
- *Yes, the theoretical ones only*

Majority of faculty as expected were cautious on the applicability of online education given how inconsistent the quality of Internet Connection and other services in the country like power lines are, presenting as part of the barriers.

- *Internet connection is bad, I doubt online is workable.*

B-Job Relevance: Defined as perceived usefulness of online education on making faculty job easier and turning online education into worthier of trying. This factor was linked to academic rigor, self-confidence and image.

Academic Rigor: Defined as high educational standards, this factor was associated to knowledge and learning outcomes.

Some faculty considered loss of some skills during online education, that re important for content knowledge.

- *Loss of skills and transfer of knowledge*

Other faculty considered that learning output isn't equivalent to face-to-face instruction, where quality of outcomes are less.

- *I don't think we can do without face-to-face, learning outcomes are affected.*
- *Student wills gain more in lecturing form interactions with faculty and discussing topics freely and openly.*

Self-Confidence: Responses revealed that direct lecturing and physical presence of white boards is a source of self-confidence for faculty, and any change in that combination might jeopardize the confidence of faculty in his/her abilities in front of students.

Lecturing was identified as the physical presence of faculty and student in a classroom set up and presented as a trust in one's ability and power.

- *I don't feel comfortable as a teacher not to model and interact with the whole body of students*
- *I prefer lecturing with face-to-face interaction*

The presence of whiteboard is another form of self-confidence that brings about psychological feeling of authority, appreciation and power in the class.

- *In a classroom with a white board I feel I am the master of the class.*
- *I think learners and instructor they both like to see the Whiteboards*

Image: Defined as the social influence and public esteem of faculty that might affect their acceptance of online education and was a product of promotion and pay.

Some faculty distinguished the fact that teaching online will not help faculty in their promotions and professional ranks which might cause reluctance among faculty to participate.

- *It might be beneficial, but time consuming and will not help in promotions*

Other faculty considered that pay is an important factor in considering teaching online, given the substantial amount of work required to complete successful online course teaching.

- *Not easy choice, my participation depends on the financial aspects, because it requires time investment.*

4.3.2.3 Pedagogical Practices

- **Research Question: How compatible are the current adopted pedagogies with online education?**

The quantitative analysis showed that the majority of faculty members taking the survey possess the required skills and will need some help to excel in teaching online courses. However, respondents were further asked to depict and reflect on the kind of pedagogy they adhere to in their everyday classes. The questions were guided by Aparicio et al (2016) e-learning framework. Respondents were asked to reflect on the instructional strategies they adopt, educational models, learning technologies and the means of technology they use in communicating with their students. Five short questions were asked:

Question 1: Which of the below best describe your instructional strategies.

Question 2: Which educational models best describe your classes?

Question 3: What learning technologies do you use in teaching?

Question 4: What technologies do you use in communicating with students?

Question 5: Would you agree on teaching online courses? Please state the reasons:

The faculty responses on the short questions could be summarized in the below Table 4.39.

A quantitative analysis of the qualitative data is presented to try to understand the proportion of faculty adhering to pedagogical approaches supportive of online teaching. It would be argued if minimal faculty members use instructional approaches and technologies in their classroom consistent with the advancement of technology in pedagogy, then a fundamental barrier would surface pertaining to the overriding beliefs, principles and ideas about the nature of learning and teaching that is taking place.

	Instructional Strategies	Educational Models	Learning Technologies	Technology in communicating
Authentic activities (real life learning)	51%			
Problem solving	59%			
Role playing	19%			
Articulation and reflection	51%			
Collaboration and negotiation	52%			
Multi-perspectives	30%			
Modelling and explaining	50%			
Scaffolding	9%			
Open learning (learning opportunities beyond formal education systems)		52%		
Distributed learning (mix of face-to-face and distance learning)		34%		
		24%		

Learning communities (groups of students with common interests)		24%		
Communities of practice		28%		
Knowledge building communities		36%		
Classical lecturing				
Digital audio and video			53%	
Search engines (i.e. Google)			55%	
Online database (online journals and library)			53%	
Web Link Manager or Edutainment Content			18%	
Glossary			18%	
Documents			69%	
E-mail				82%
Discussion area				36%
Forum				16%
Chat				25%
Social network				27%
synchronous communication				27%

Table 4.39: Pedagogical Practices Results

The first two questions were answered by 92 respondents, whereas 91 answered the third, 88 the fourth and 71 the fifth. These questions are considered important, as it provides unambiguous picture on the kind of education delivered inside the classrooms of Lebanese higher education institutions and shows how close they are from education models adopted by online instructors.

The short questions were driven by the adopted theoretical framework (see Figure 2.1), to assess the readiness for e-learning, where the researcher can gain better understanding into the technologies and services offered to students, how technology enabled pedagogies are.

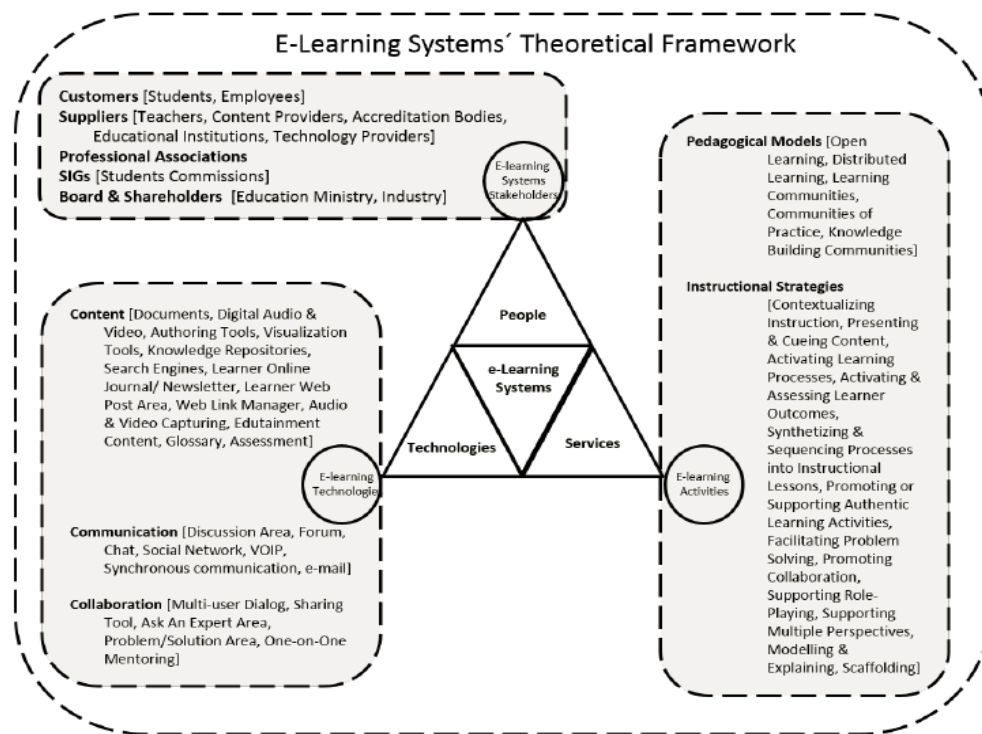


Figure 2.1: Adopted E-learning Theoretical Framework (Aparicio et al. 2016)

Instructional strategies are the strategies and techniques the instructor use in his/her classroom to deliver assigned topics. Majority of respondents confirmed adhering to real life situations (authentic activities) (51%) in teaching, negotiation and collaboration (52%), reflection (50%) and modeling (50%). Few faculty members appear to be using role playing and scaffolding. Regarding models of education used in teaching, majority of faculty members, showed the use of open learning models, where delivery extends further formal education systems, accounted for 52% of total respondents, and 34% incorporate blended modes of delivery into classroom teaching. Majority of faculty use digital audio and videos, searching

engines and online databases, whereas 82% use e-mails for online communications, and brief minority adhere to advanced e-learning tools for interaction such as discussion board, chat, synchronous communication and social network.

The “Best Practices in Online Teaching Strategies” framework (Hanover 2009) will be used to assess the qualitative findings, which brings about the instructional strategies in order of importance that play a significant role in the success of online learning. Displayed in the Table 4.40 below, results show that faculty responded positively to the most important seven principles, indicating pedagogical readiness from the faculty side, especially that classical lecturing accounted for 36% of responses only.

Pedagogical Principles for Online Best Practices (Hanover 2009)	
Group problem-solving and collaborative tasks	✓ (59%)
Coaching or mentoring, and discussion	✓ (52%)
Group problem-solving and collaborative tasks	✓ (52%)
Problem-based learning	✓ (52%)
Discussion	✓ (52%)
Case-based strategies	✓ (51%)
Simulations or role play	
Student-generated content	
Coaching or mentoring	
Guided learning	
Exploratory or discovery	
Lecturing or teacher-directed activities	✓ (50%)
Modeling of the solution	

Table 4.40: Pedagogy Results Based on Hanover (2009) Model

The minimal usage of online communicative tools such as discussion area, forums, synchronous communication and chat, in addition to the mere adherence to blended learning represented through findings on “Distributed Learning”, and in return relatively heavy usage

of e-mails, digital audio and video, searching engines and online database, indicate the absence of online learning or blended modes of delivery form Lebanese classroom instructional practices, described in Figure 4.12 and Figure 4.13. According to Bates and Poole (2003) model, the use of e-learning software and advanced technology serves the purpose of enhancing classroom teaching rather learning at distance.

Therefore, it could be argued that the current pedagogical practices are majorly aligned with online education principles surfacing a prospect towards adopting online systems, yet the absence of usage of asynchronous and synchronous tools of online communication (except basic e-mail exchange) present as a barrier, where technology is used to enhance classroom teaching rather than teach in blended learning format or learning at distance.

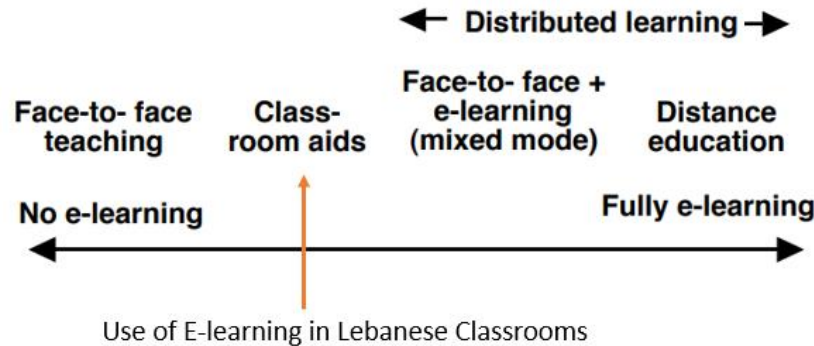


Figure 4.12: Results on E-learning Practices (Adapted from Bates and Poole 2013)

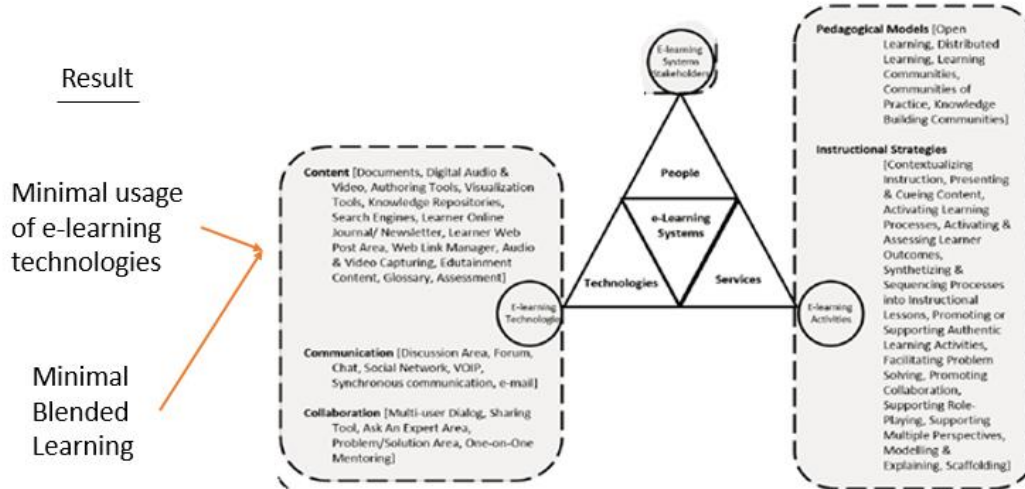


Figure 4.13: Results in Blended and E-learning Practices

4.3.2.4 Study 2 Qualitative Model

The above findings lead to the formation of **Study 2 Model 3**, presented in the below

Table 4.41:

	Prospects	Barriers
Adopted Instructional Strategies and Educational Models	Technology-enabled pedagogies that are consistent with the advanced teaching principles of online education	
Adopted E- Learning and Communicative Technologies		Minimal use of blended learning approach and mere absence of online learning models of delivery embedded within hybrid instruction

Table 4.41: Study 2 Model 3

4.3.3 Study 2 Discussion of Findings

In this section, discussion of Study 2 findings will take place in the light of international literature and that of Lebanese specific. Data collection first took place through sequential mixed designs, where data collection started by quantitatively assessing faculty readiness to teach online, then continued qualitatively where the research aims on further elaborating faculty acceptance of online education and their pedagogical readiness, as they proved to be widely controversial and connected to readiness.

4.3.3.1 Integration of Data

The first level of analysis, aimed to triangulate data, where findings from faculty readiness was cross checked and verified across pedagogical readiness findings and behavioral intention, Figure 4.14, to first provide general overview on acceptance of online teaching and the current adopted pedagogical practices, then assign the factors affecting each.

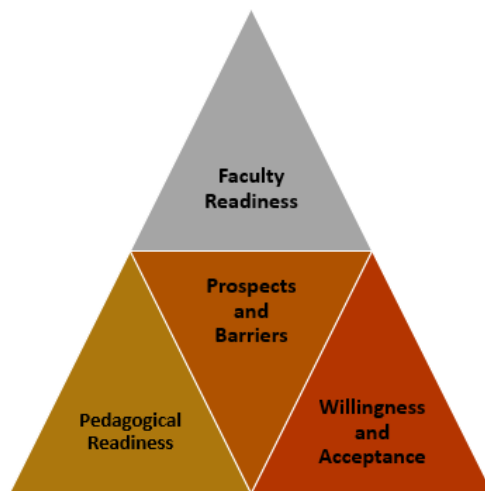


Figure 4.14: Integration of Data

Following data integration, discussion of findings will take place through triangulating quantitative data versus qualitative and literature review, Figure 4.15, in order to derive prospects and barriers towards adopting online education systems, in a country where faculty form key stakeholders. This process would help to understand how consistent findings from Lebanese context against international literature are first, then surface the possible valuable contributions of these findings within the scope of literature specific to Lebanese context, that weren't derived earlier.

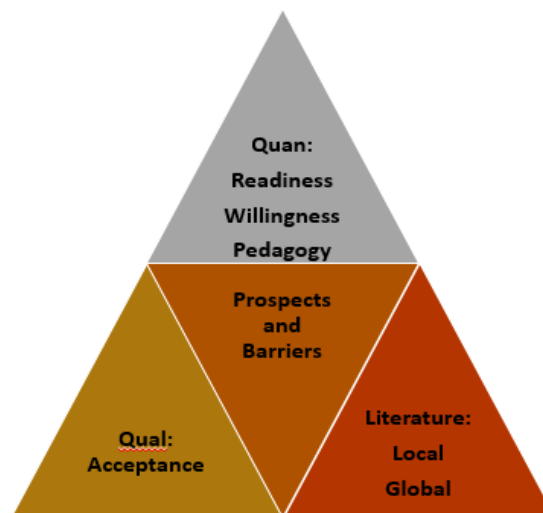


Figure 4.15: Extended Triangulation of Data

Results of data triangulation are summarized in the below matrix, Table 4.42, where comparison across dataset took place.

Faculty	Readiness Strength	Readiness Concern	Attitude Strength	Attitude Concern	Pedagogy Strength	Pedagogy Concern	Leb. Lit	Int'l Lit
Acceptance of Online Education	X		X				X	X

Faculty Readiness	X					X	X
Access to computer and proficiency in technology	X		X		X	X	X
Technology integration into pedagogy	X		X		X	X	X
Compatible pedagogies with OE	X		X		X	X	X
Experience with Online Education		X		X		X	X
Familiarity with e-learning communicative tools (chat, discussion board)		X				X	X
Experience with e-learning technology (LMS/CMS)		X				X	X
Perception of Academic Rigor		X		X		X	X
Perception of interaction in online environments (vs face-to-face)		X		X		X	X
Commitment to teaching online		X		X		X	X
Access to education			X			X	X
Risk of Isolated Learner				X		X	X

Meeting Student Needs (career and skills)	X	X	X
Perceived as a tool to increase efficiency of teaching	X	X	X
Motivation to teach blended	X	X	X

Table 4.42: Comparison Across Study 2 Dataset Results

In the below section, discussion on global faculty readiness, behavioral intention and pedagogical readiness would be presented first. Then factors that are similar and achieving similar scores as potential barrier or prospect are combined under one finding, then verified across different modes of analysis within the same section then discussed in the light of literature. For instance, faculty scored high in access to computers at home and office first, then scored high as well in carrying their laptop while traveling, these two were merged under one finding: continuous access to computers. Then, the item pertaining to technical skills in using computers and Internet also scored high among faculty, so thus factor and the one before were merged to: Access to and Proficiency in Using Technology. Findings that are specific to each and as merged factor were discussed in relation to findings from another analysis sections and basically to literature.

Global Readiness, Willingness and Pedagogical Readiness of Faculty

Faculty e-readiness was studied from the scope of readiness to teach online classes, and was a measure of four constructs, namely: (i) technical skills, (ii) experience with online teaching, (iii) attitudes towards online learning, and (iv) and time management and

commitment. Palloff and Pratt (2011) survey has been used comprising 35 questions. Global Readiness was measured as the total score of each respondent on the completed survey, where scores above 90 points indicate readiness and faculty are qualified to teach online, with some support:

150 – 175 points = The faculty member is well suited to teaching online courses and the chances are high that the respondent is an expertise in online instruction.

90 – 15 points = The faculty member will most probably be needing some support to achieve success in teaching online courses and chances are high that the respondent appreciates online instructor.

Below 90 points = Faculty will need considerable training and support for success in teaching online and are probably a visitor or novice online instructor.

Furthermore, readiness at each item of the survey was that of mean score greater than 3.4, the expected level of e-readiness for individuals, adopted from Aydin and Tasci's (2005) model for e-readiness assessment. Quantitative analysis led to assigning the items with scores below 3.4, as possible concerns at the level of readiness, and those that score higher as possible strengths at the level of readiness. Analysis revealed that the vast majority of faculty (around 96%) are highly qualified to teach online courses in a country where online education is banned from the public, with total readiness of 3.55. Such readiness levels among key stakeholders in the higher education sector in Lebanon, presents as a strong prospect towards a policy decision on the adoption and implementation of online education.

Readiness has proved to be a powerful factor in ensuring successful transitioning from traditional modes of learning to highly advanced as online education (Rasouli et al. 2016). Due to the nature of such environments, faculty will most likely need to acquire new set of teaching tools and resort to latest advancements in pedagogy in order to ensure meeting of learning outcomes and students achieving significant gains, hence, a study of faculty e-readiness is of outmost important throughout any pre-policy decision making phase.

Another two major factors that were studied were the acceptance of online education by faculty and the pedagogical readiness. Stewart et al. (2010) definition for acceptance was adopted, where acceptance has been defined as “willingness to teach an online course” (p. 598), and the rationale behind students’ responses on willingness to teach brought about attitude concerns and strengths towards online education. Personal reflections revealed that the highest majority of faculty confirmed their willingness to teach online, indicating increased acceptance of online education among Lebanese faculty to teach online. There is lack of consensus on faculty acceptance in studies originating from Lebanon, where for instance Abou Chedid and Eid (2004) results showed favorable attitudes of faculty to engage in full online education programs, other researchers (such as El Turk and Cherney 2016; Nasser and Chedid 2010; Baroud and Abouchdid 2010) revealed resistance to teach online. This study situates itself with Abou Chedid (2004), and supported by international literature, on increased acceptance.

Pedagogical readiness was obtained through fulfillment of certain indicators relative to faculty adopted technological tools and activities, as suggested by Aparicio et al. (2012). These two factors in addition to the main readiness factor would bring an unambiguous

picture on faculty readiness and acceptance of online education, in the light of adopted and practiced pedagogies in day-to-day classes. Assimilating the quantitative and qualitative analysis brings about an important finding that, Lebanese faculty are qualified and willing to teach online, however their perception of quality of online instruction compared to traditional learning is associated to the to the low public esteem for online learning in Lebanon and Middle East, rather than the worth of online education itself. Faculty appeared to be positive on integrating technology into pedagogy that are consistent in nature with online instruction, however, they proved to be far from implementing blended-learning approaches, and are mostly traditional. If ever adopted, then blended learning was restricted to the form of completing and submitting assignments remotely, rather than real online model, where the student learn content through asynchronous or synchronous modes of delivery. These findings are supported in literature, where Mirza and Al-Abdulkareem (2011) confirmed that the lack of popularity of online education in the Middle East explains the reluctance among academicians to adopt online education, and any forms of e-learning was limited to the use of Moodle and Blackboard.

A study on features influencing success could help in making strong decisions regarding the success of implementation (Rasouli et al. 2016). Readiness among faculty is very important, however, attitude of faculty is a key determinant in successful transformations of educational institutions (Hussein 2010), regardless whether the intention is to shift blended approach or full fledge online programs, as in all cases it “requires a reconceptualization and reorganization of pedagogical strategies” (Georgina and Olson, 2008, p.3).

The aim behind the short questions was to understand whether faculty take into consideration during their lesson planning, the pedagogical approaches and instructional styles that are consistent with online education. If the aforementioned pedagogical are not present, then any e-learning system wouldn't be able to achieve the learning outcomes and any significant achievement gains.

Global Pedagogy and Preference for Blended Learning

The aim behind the short questions was to understand whether faculty take into consideration during their lesson planning, the pedagogical approaches and instructional styles that are consistent with online education. If the aforementioned pedagogical are not present, then any e-learning system wouldn't be able to achieve the learning outcomes and any significant achievement gains. Findings revealed that majority of the faculty members pertain to instructional approaches emphasizing authentic learning, where the student is encouraged to demonstrate knowledge through real-life context and situations, problem solving where students get “stuck” and “unstuck”, teaching them to grapple and unfold solutions, enroll in collaborative activities to teach negotiation and reflection, and as expected modeling and classical explaining. These findings are supportive of many research studies on the required pedagogical skills for effective online delivery, namely, Palloff and Pratt (2000); Easton (2010); Gay (2013), etc. Very few faculty appeared to teach in blended learning modes, yet a large number expand their education beyond formal education systems and classrooms. Faculty members didn't seem to be far away from integrative technologies into education, where majority use online journals and databases to support their teaching, along with audios and videos and searching engines. Yet, very few demonstrated familiarity with technological

tools that are used in supportive technologies, such as chat, discussion areas, social networks, etc. and rather rely on e-mails and communicative tool. Accordingly, prospects and barriers are derived as summarized in the below table.

This study reached important conclusion on the pedagogical considerations of the faculty members. Learning appeared to take the form of real world scenarios emphasizing authentic learning, that is supported in literature as a critical factor for success (Carwile 2007; Doolittle 1999; Jonassen, 1994; Koohang et al. 2009), hence is regarded as an area of strength. Similarly, the studied faculty members confirmed using activities that promote negotiation and collaboration. Another prospect is highlighted in faculty behavior, where the social presence of students incorporating negotiations, discussions and debates (Chickering and Gamson 1991; Chickering and Ehrmann 1996; Jonassen 1994) is one important feature of e-learning. What seems to be lacking was the presence of ample opportunities for students to undergo multiple perspectives and representations of content, that is considered as another significant feature of pedagogy (Chickering and Gamson 1991; Chickering and Ehrmann 1996), hence a pedagogical barrier.

Therefore, it could be argued that faculty members pertain to instructional approaches that are compatible with online education, emphasizing authentic learning, where the student is encouraged to demonstrate knowledge through real-life context and situations, problem solving where students get “stuck” and “unstuck”, teaching them to grapple and unfold solutions, enroll in collaborative activities to teach negotiation and reflection, and as expected modeling and classical explaining. This conclusion is considered as a valuable contribution appearing for the first time in Lebanon.

Online Teaching as a Catalyst for Higher Education Pedagogy Reform

Data confirmed that faculty have positive perception towards the influence of online education on their teaching methods and eventually effectiveness, that would be translated into considering online teaching as a catalyst to induce change and reform at the level of higher education pedagogy in Lebanon. As surfaced in qualitative part, lecturing is the most common, hence, web-instruction can serve as a tool to improve quality of teaching, and education. These results attest Nasser and Abu Chedid (2010) and El Turk and Cherney (2016). On the other hand, barriers surface by perceived online teaching as increased workload at so many levels. Through their final report on prospects of online education, Massachusetts Institute of Technology (MIT), demonstrated that that unique affordances are offered through web instruction that permit “customization of learning, remote collaboration, just-in-time scenarios, continuous assessment and blended learning. They also importantly have the potential to support teachers, and to provide them with valuable insights into their students’ learning” (2016, p. ix). The perception of online teaching as a catalyst for pedagogical reform in higher education is a valuable contribution, as it appears for the first time in research studies in Lebanon.

Therefore, it could be argued that online teaching is perceived as a catalyst for higher education pedagogy reform and is considered as valuable contribution.

Faculty Access to Computers and Technology Literacy

Faculty access to computers and technology literacy comprises the access of faculty to computers at office/work and during traveling, and the proficiency in using various basic

software and Internet features, such as Microsoft Office (Word, PowerPoint, etc.) search the Internet confidently and download/upload attachments or files. Quantitative analysis showed that faculty have continuous access to computers and are competent in using computers and Internet, which are the basic skills needed to utilize Internet content, comprehend and exchange meaning through different forms of communication such as e-mail. These results are further supported in the pedagogical considerations from qualitative analysis that indicated usage of digital audio/video, document, e-mails, searching engines and online database, and at the same provide explanation to the increased acceptance of online education and teaching online among faculty.

Therefore, it could be argued that Lebanese faculty proved to have continuous access to computer at home, office and throughout their travels, are proficient and confident in using and Internet navigation, and are motivated to teach online.

Prospects towards adopting online education emerges from access to computers, the competency levels of faculty in utilizing technology, and willingness to teach online. These findings attest Nasser and Abou Chedid (2010) and Abouchedid and Eid (2004), where instructors in the two studies conducted in Lebanon showed support and willingness to invest in efforts in training and then teaching distance programs. Broadly, these findings lie in parallel with studies from the West, showing increased faculty acceptance and support for the implementation of e-learning and associated pedagogies in education sector such as Casdroph (2014), Gay (2016), Liu et al. (2104), etc. These results are of great importance, as literature suggests that high-level users of technology tend to better integrate technology into their pedagogy, as they tend to perceive greater benefits in utilizing technologies in their

instruction, with particular reference to online environments (Georgina and Olson 2008). Furthermore, Spotts (1999) confirmed that rewards and recognition are important factors that proved to encourage faculty to take the challenge and achieve beyond expected levels.

Familiarity and Experience of Faculty with Course Management System

Familiarity and experience of faculty with course management systems is denoted by their knowledge of the software and usability versus their experience in using it to support their campus learning. Integrating quantitative results and analysis from attitude and pedagogy qualitative analysis brings about unclear picture on the status on familiarity versus their experience/usage of course management systems or learning management systems. Quantitative results indicated faculty readiness on the knowledge of functionality of course management systems, that wasn't consistent with later findings that showed lack of readiness and experience in using such systems. Further confirmation on the lack of readiness could be luminated from faculty pedagogical practices that showed minimal utilizing of discussion areas, forums, chat rooms, etc., which is part of communicative technologies used in learning management systems. A number of reasons would be attributed to the mismatch, (i) first faculty may not have had clear understanding on the terminology "learning management system" or "course management system", as interviews from qualitative parts show that Moodle, Blackboard and other student information and course management systems are heavily utilized in private universities in Lebanon, or (ii) the sporadic proliferation of e-learning systems could be accounted the lack of faculty readiness where interviews showed absence of any learning management system in the public university in Lebanon. Therefore, this factor would be considered as a barrier towards adoption of online learning systems, and

this study recommends further research to investigate this phenomenon, as it is widely unreasonable that the developed countries are rushing towards optimizing technological infrastructure to induce revenues through distance learning (Georgina and Olson 2008), while faculty in Lebanon aren't yet exposed to minimal technology advancements. Barriers pertaining to functionality and experience with e-learning is well document among research studying Lebanese context, where Abuchedid and Eid (2004) confirm that at its best, the adoption of e-learning in higher education institution is restricted at using Moodle or Blackboard. The finding also concurs with Venkatesh and Davis (2000) and Asiri et al. (2012) correlation between faculty direct experience with learning management system and their judgement on its importance and perceived usefulness, and eventually their behavioral intention to use it. In the implementation process of an e-learning system, teaching staff should be well-prepared and highly competent as they play a central role in the effectiveness of online delivery, and it is not the technology but the instructional implementation of technology that determines the effects and significant gains.

Therefore, this study argues that lack of familiarity with e-learning software is prevailing among faculty.

Technology-Enabled Pedagogy that is Compatible with Online Instruction

This factor comprised a number of features attributed to faculty readiness in incorporating technology into their face-to-face classes, in addition to adherence to pedagogical activities coherent with online instruction, i.e. using discussions, community-building, collaboration, real life experiences, and critical thinking. Faculty proved they are positive on integrating technology to face-to-face instruction and showed high readiness in using technology

enabled pedagogies, that are of similar principles to online instruction, showing pedagogical readiness for online education. These quantitative results were also confirmed by general positive attitude of faculty to teach online and blended learning approach. Further qualitative description of pedagogical practices confirmed findings, where majority of faculty resort to authentic activities, problem solving, and negotiation and collaboration. Instructional practices revealed emphasis on authentic learning, where the student is encouraged to demonstrate knowledge through real-life context and situations, problem solving where students get “stuck” and “unstuck”, teaching them to grapple and unfold solutions, enroll in collaborative activities to teach negotiation and reflection, and as expected modeling and classical explaining. These findings are supportive of many research studies on the required pedagogical skills for effective online delivery, namely, Palloff and Pratt (2011); Easton (2010); Gay (2013), etc. Authentic learning is well supported by literature as a critical success factor in online pedagogy (Carwile 2007; Doolittle 1999; Jonassen, 1994; Koohang et al. 2009), hence, is regarded as an area of strength. Similarly, the studied faculty members confirmed using of activities that promote negotiation and collaboration. Another prospect is highlighted in faculty behavior where the social presence of students incorporating negotiations, discussions and debates (Chickering and Gamson (1991); Chickering and Ehrmann (1996); Jonassen (1994)) is one important feature of e-learning.

Therefore, prospects lie in positive attitude towards integrating technology to face-to-face instruction, showing high readiness in using technology enabled pedagogies, that are of similar principles to online instruction, showing pedagogical readiness for online education.

Competency in Using Basic and Advanced Online Communicative Tools

Online communicative tools are defined as the pedagogical techniques used to promote interaction and communication among students and faculty, that would increase visibility of the faculty. These techniques in this research study are referred to the asynchronous modes including e-mails, discussion boards, Wikis, Blogs, Google Docs and forums, while synchronous are tools include chats and videoconferencing such as Skype, Adobe Connect (Khalil and Ebner 2017). Quantitative findings conveyed readiness at the level of asynchronous such as e-mails, and lack of readiness in the other form of communication, which were further supported by the qualitative pedagogical part that indicate high usage of e-mail tool by faculty (reaching 85%), and absence of other forms of communications. Strength is referred to the use of e-mails, which are the most common utilized asynchronous modes of interaction in online environments. E-mail requires minimal technical proficiency, which can be used as public and private channels for communication (Hanover 2009). However, literature suggests that online instructors should be familiar with a range of online tools available to support teaching and create opportunities for interaction, engagement and enhancing learning process. Lack of familiarity is an indicator on the absence of blended learning, which also confirms earlier quantitative results on the readiness of faculty showing lack of experience with e-learning, whether in teaching or training. These findings form a major barrier, attesting Abu Chedid and Eid (2004) and Nasser Chedid (2010) on Lebanese faculty and Sadik's (2007) results on Egyptian faculty, where integration of e-learning is limited towards supporting classroom instruction rather than opening new horizons for education. Moreover, it concurs with Mantilla and Lewis (2014), that despite technical

readiness, faculty knowledge on online teaching pedagogies and tools were insufficient. Assessing faculty readiness to effectively engage in online instruction is extremely important to address individual needs, and “choosing the right approach and applying timely strategies to ensure smooth transitions to new teaching and learning modalities” (p. 228). Therefore, it could be argued that lack of faculty experience in using collaborative online tools, which maybe an indicator to the absence of blended learning, which also confirms earlier quantitative results on the readiness of faculty showing lack of experience with e-learning, whether in teaching or training. This finding is to be considered as a valuable contribution.

Perception on Quality, Interactions and Resistance to Change

Triangulating data showed that faculty don't believe that the quality of online education is equivalent to traditional learning, and attitude analysis indicated that one of the attributed reasons is lack of faith in quality of interactions over the web compared to face-to-face which proved to be one form of resistance to change. Faculty concern on interaction was extended to reach fears on isolated learners, where some students may be placed at disadvantage in taking online classes. Therefore, it could be argued that classical instruction is still dominating higher education, forming major barriers, where despite technological readiness and willingness to teach online class, perceptions towards quality are still negative, indicating clear resistance to change. Results concur with majority of literature conducted in Lebanon such as (Nasser and Chedid 2010; Mirza and Abdelkaree, 2011). They are also in parallel with international debate that “the development of these two trends merging in the contemporary education setting raises a question about the effectiveness of online courses,

particularly as compared to traditional classroom learning and in relation to individual student needs, perceptions, and learning outcomes” (Ni DATE, p. 200). Faculty expressed clear preference for classical instruction as a driver for quality education and effectiveness of learning, which is embrative of Davies and Graff (2005) who demonstrated that performance is associated to interaction. Online education tend to replace face-to-face disagreement, discussions, debates, and conversations, by interaction with discussion boards, forums, and different asynchronous tools, where effectiveness of such platforms is still controversial (Ni 2013).

Thus, barriers surface in perceived lack of academic rigor of online education compared to campus learning.

Perceived Usefulness for Students

Faculty demonstrated perceptions that online education can meet students’ needs, through allowing for career advancement, as showed in student and senior leadership findings, and develop their self-discipline and regulatory skills, presenting as prospects. On the hand, expressed limited applicability of online education is a barrier, where faculty, similarly to students, and senior leaders and MEHE at a later stage, confirm that online education is not applicable in all fields, rather in some face-to-face presence is required such as laboratories and design studios, presenting a barrier. These findings are supported by many research from international context literature. These findings attest Turkey and Cherney (2016) and Tarhini et al. (2013).

Therefore, prospects lie in perceived usefulness for students.

4.3.3.2 Study 2 Model

Findings following triangulation and discussion of findings led to the formation of **Study 2**

Model 4, Table 4.43:

Faculty	Prospects	Barriers
Readiness	High readiness among faculty to teach online	Perception on lack of academic rigor compared to campus learning
	Access and confidence in using computers and technology	Doubts in student-regulatory skills
Acceptance	Increased acceptance to teach online	Social Influence
	Improved Efficiency in Learning	
	Intrinsic motivation to teach online	Self-confidence
	Online Teaching as a catalyst for Higher Education Pedagogy Reform	Job Relevance
	Preference for Blended Learning	Resistance to change
	Allows for career advancement	Limited applicability
	Widens Access to Education	Increased workload
	Develop self-directed learners	
Pedagogy	Technology-Enabled Pedagogy that is Compatible with Online Instruction	Lack of experience and knowledge in the functionality of course management system
Technology		Lack of knowledge in using advanced online communicative tools
		Lack of experience in using advanced online communicative tools

Table 4.43: Study 2 Model 4

4.3.4 Readiness, Willingness and Acceptance Model

The four assigned readiness factors proved to be critical components of faculty e-readiness for online teaching, and in return readiness proved to be significantly predicting willingness to teach online. On the other hand, through identifying the personal perceived advantages and disadvantages of online education, the assigned readiness factors appeared to be associated to acceptance of online education as well. Therefore, this research study argues that technical skills, attitude, experience with online education and time management and commitment are critical components of faculty e-readiness and acceptance, that will both affect the faculty willingness to teach online, Figure 4.16.

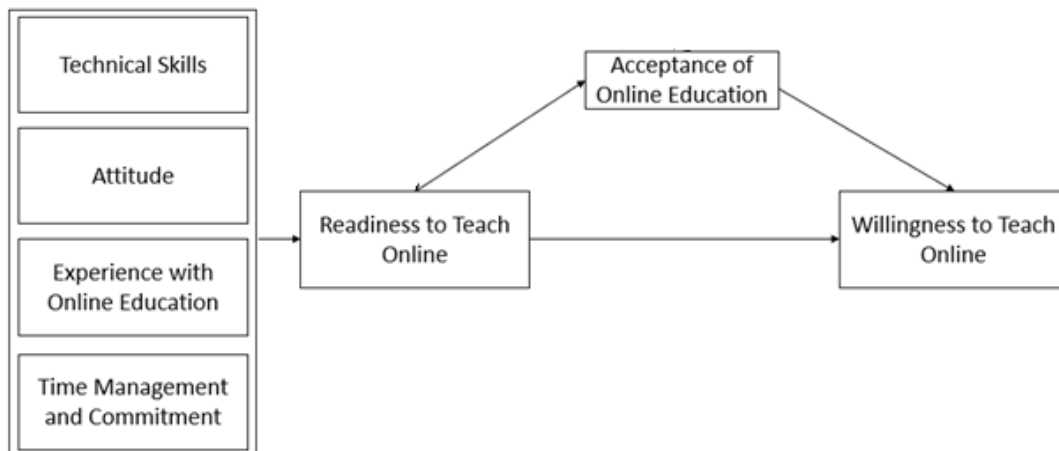


Figure 4.16: Faculty Readiness, Willingness and Acceptance Model

In addition, four factors appeared to be influencing acceptance as well, namely age, social influence and perception on self-regulation capacity of students and applicability of online education into various fields and programs, Figure 4.17. This model will be tested quantitatively in another paper.

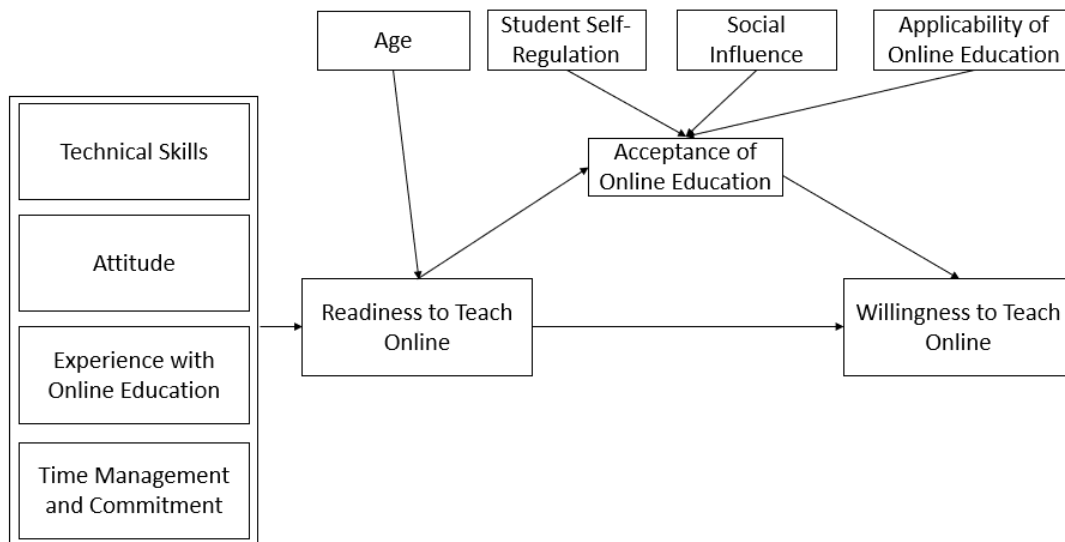


Figure 4.17: Expanded Faculty Readiness, Willingness and Acceptance Model

4.3.5 Comparison Between Study 1 and Study 2

Venn diagrams were used to present commonalities and uniqueness of findings between Study 1 and Study 2, Figure 4.18. The process of comparing indicates that the two stakeholders share some attributes, namely: readiness and acceptance for online education, and perceived usefulness in terms of increased efficiency of learning, access to education, personal development and career advancements. In addition, they shared results on barriers, where both groups showed reluctance to adopt online education at undergraduate levels, constraints on program applicability, resistance to change, doubts in regulation skills of learners and affected academic rigor. Academic rigor is expected to be less than face-to-face.

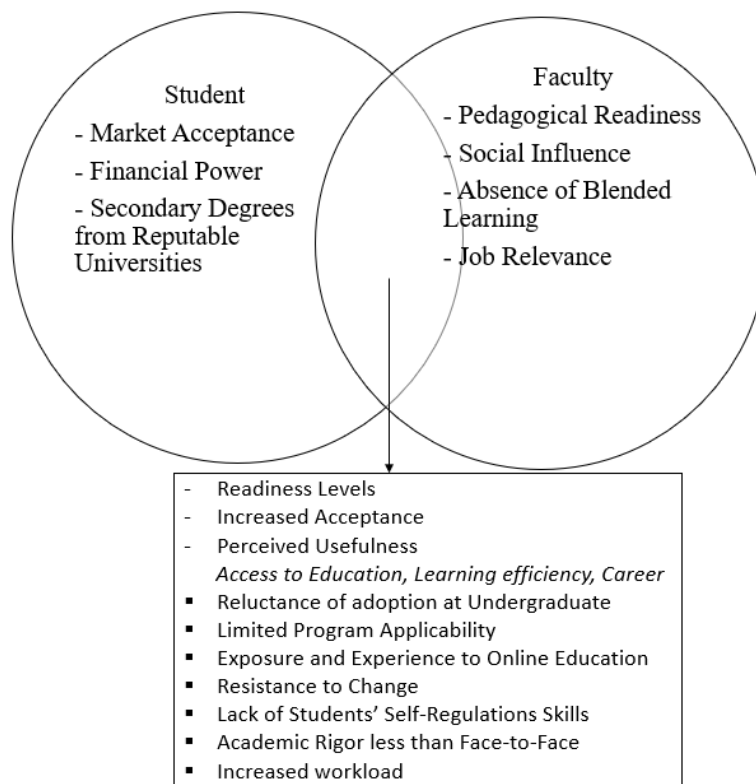


Figure 4.18: Graphical Representation of Study 1 and Study 2

4.3.6 Summary

This section aimed at answering three research questions and testing four hypotheses. It started quantitatively by assessing faculty e-readiness and willingness to teach online, then qualitatively to explore faculty acceptance of online education. Triangulation of data took place that led to a study model on prospects and barriers from faculty side. Analysis showed adequate readiness levels among faculty, willingness and increased acceptance to teach online. Prospects were in pedagogical readiness, perceived usefulness for students in terms of efficiency in learning, personal and career development and access to education. Barriers

surfaced in perceived absence of self-regulation skills among students, limited field of applicability, affected academic rigor compared to face-to-face, experience in online education, social influence and absence of blended learning approaches. Results also expanded Palloff and Pratt (2011) model, and section ended by comparison and contrast between Study 2 and Study 1 findings through using Venn Diagram.

4.4 Study 3 on Perception of Institutional Senior Executives

Thematic analysis was used to analyze the qualitative data collected from the interviews with senior executive leaders, leading to the emerging of several distinct patterns.

Jameson (2013) argues that as the evolution in the world of educational technology expands and advances, there is an urge to “bridge interdisciplinary gaps” (p. 893), where the issue of effective leadership emerges in assessing the “effective strategic and operational analysis and implementation of the secondary supportive functions that are fundamental in underpinning and supporting the primary educational technology function of learning and teaching with technologies” (p. 893). In line with the above, this section aims at identifying the perception of key stakeholders and academic discussion makers, in an attempt to present the institutional opportunities and barriers pertaining to adoption of online education.

4.4.1 Qualitative Data Analysis

- **Research Question: How could the faculty acceptance of online education be described?**

Two themes were identified, namely opportunities at the level of institutional senior executives, and institutional barriers, in addition to a number of sub-themes, components and codes, Table 4.44. It is to be noted however, that e-learning and online learning are used interchangeably in this study referring to higher education levels in the broad term in academia referring to learning situations that majorly happens through e-learning software.

Key Theme	Themes	Sub-Themes	Sub-Themes Components	Codes
Prospects	Higher Education Institutions	Strategic Asset	Increased Revenue	Serving Untraditional Populations
				Respond to Space Constraints
			Increased Recognition	International Student Enrollment
				Learning Outcomes (University of choice)
		Institutional E-Readiness	Supporting Students' Career Development	Career Advancement
				Job-Ready Graduates
			E-Learning Management capacities	E-Learning Platforms
				Online Resources
				Competent Administrators
		Institution Strategic Planning	Needs Assessment and Empirical Research	Faculty Resourcefulness
				Piloting and Experimenting Courses
			Institutional Innovation	Surveying Students
				Overcoming Attendance Issues
				Overcoming Doubts in Learning Outcomes
				Supportive Efforts in Online Education
				Postgraduate Studies

	Chances of Success	Hybrid Courses
		Continuing Education Courses

Table 4.44: Institutional Prospects Components

A-Strategic Asset:

Defined as perceived usefulness of online education that would such modes of delivery into strategic asset, serving three purposes, increased revenues, increased recognition and supporting student career development.

Increased Revenues:

Defined as motive in increasing institutional income and reducing cost spending, through increasing local enrollment by serving untraditional populations and respond to space constraints.

Increase local enrollment through serving untraditional populations: An important motivation that was exposed throughout majority of the interviewees' discussions where the attempt to offer online courses for the purpose of increasing student enrollment. Over the past few years, almost all universities haven't been able to reach their forecasted targets in number of new enrollments, due to many reasons among which is security instability the country has witnessed. Inducing enrollment was demonstrated mainly through reaching out to 'untraditional populations', specifically students who are residing in remote areas, who are pursuing particular careers in parallel with their studies, suffering from certain disabilities, or are underprivileged for some other reasons such as housewives or women who are entrepreneurs.

JM: The advantage is we can recruit and admit much students, we can increase the number of enrolled students, there are many people now out there they want to study they are working they can't attend university. So sometimes student register for program, but they need to work 8 – 4 pm, either there are no courses after 4 pm, or not suitable to graduate, many of those students what they do they go to other parts of the world, they work during the day and study during the night, and then they ultimately go back to regular setting, or they get their degrees online.

SS: If you look at enrollment levels over the past years, all universities have seen reduction in enrollment, because of economic situation and many universities are popping up with much lower prices and standards. There, we lose our students, and many are going for online courses although they are not recognized by ministry of education, so you have students in Lebanon enrolled in online program.

WN: I think it is very important. Especially for people who can't be in the classroom, women with responsibilities whether they have their own business as entrepreneurs or housewives, they want education they should be able to do so without leaving their house, people with disabilities, or other special needs so they might be able to leave because we don't have the proper infrastructure to accommodate for their needs, place to park, take a taxi friendly for wheelchair. Then you've got those in remote areas, he has his farm and raising his kettle, he can't come to city but would like to get an education. For those people it is important, for all potential students.

Respond to Space Constraints: The efficiency of running online classes in expanding given current facilities and capacity was highlighted in many of the interviews. Setting up online classes doesn't require the institution additional costs, rather capitalize on current technology infrastructure, allowing to free some classrooms, and expanding class offerings using available resources and facilities.

RG: Universities are going online, because it reduces their dependence on facility and technology and saves them cost, but they should have large number of students.

WN: For Faculty of Arts and Sciences, they have issues with scheduling, they don't have enough classrooms, there is always an issue finding classrooms for big lectures and so on.

WN: The pilot that is happening with Faculty of Arts and Sciences, is ok let's look at some of these courses that have common lectures, and let's maybe make these common lectures online. It is better for students because they no longer have to come for these lectures, that maybe they aren't getting much out of it compared to learning in smaller groups. And also we would free some classrooms.

Increased Recognition: As one of form of reputation and increasing visibility, recognition in this context builds on the individual's personal impressions and beliefs in the institution meeting relevant standards. This factor surfaced in three of the five represented institutions, which are practically the most established in the country, where respondents linked offering online classes to increased perceived recognition among the community. The rationale behind offering online education for three of the five represented institutions is to increase the recognition of the university in the country and the Middle East, through increasing international student enrollment and improving learning outcomes via integration of web-based instructions.

Increase international student enrollment: Diversity in cultures and nationalities remain an important goal for senior leaders as indicated in the interviews. One way to recruit more international students is through offering more distances programs, especially that Lebanon has been passing through turbulence stage for long categorized by political instability and opening borders for Syrian refugees' influx, shaping the country to be far from education destination for international students. And for universities that are of century old, the presence of solid international study body becomes a need.

ID: When you design a blended program you have a series of courses, you have to think why am I designing this program in blended format. For instance, let's take example nursing, they want to increase enrollment of students from abroad. So, they want this program to be appealing to students from MENA region. So, it is happening in nursing who are designing 2 blended masters programs, 70% online – 30% face to face. For the model we adopted in nursing, which is 8 courses, all courses have 1 or 2 weeks face to face then they have 10 weeks online, then another 1 or 2 weeks face to face. SO, students know from the beginning, even if they are taking 2 courses, they come here for 1 or 2 weeks beginning and end.

Sarkis: What differentiates some of the leading American universities in the country from the remaining institutions, is the number of international students they recruit,

and they invest in a good representation of international student in their total student body.

JM: If you look at enrollment levels over the past years, all universities have seen reduction in enrollment, because of economic situation and many universities are popping up with much lower prices and standards. There, we lose our students, and many are going for online courses although they are not recognized by ministry of education, so you have students in Lebanon enrolled in online program. I have a colleague who is taking digital marketing strategy course with Cornell University, the issue is if I will invest in online course and pay \$3000 will it be recognized by the institution, will they consider this as development, or extra learning, even this urn t sure the institution will consider t as added value and give raise merit raise etc.

Increasing Learning Outcomes: Applied in particular situations and circumstances, if properly designed and implemented, online learning can lead to better quality of learning.

Representatives of one leading university only, who are experienced in e-learning, demonstrated that replacing sessions taking place in big halls accommodating 300 students with online sessions, appeared to be on their agenda. There are doubts in the quality of learning that is taking place in such big halls, that usually offer classes in fundamental Biology, Chemistry, Physics, etc. During a private discussion between the researcher and one of the students taking these classes, she even further explained that not only learning is less, but students have low faith in quality of such classes, so they sign up their names and leave and rather have these sessions studied separately away from class.

WN: We start with a problem, so they want to free up classroom space. But they also have a whole bunch of courses called common lectures, these are done in auditorium with 200 – 300 students, most of them are not paying attention, how much learning is happening in these sessions.

Supporting Students' Career Development:

Among the demonstrated scope of responses is the benefit of online education in meeting students' needs through supporting their career development, that appeared in two folds, support student career advancement, and produce job-ready graduates.

Student Career Advancement: Referred to as a mean to help students achieve better integration among different societal demands, this aspect appeared in majority of the responses for students who are keen on personal achievements while studying, permitting "Quality of Work Life" (Cascio and McEvoy, 2003 in Tarhini et al. 2013). It is of institutions' benefit, through better return on investment, in supporting the career advancement of those students who already laid some jobs and would want to pursue a degree in parallel. For instance, students in Executive MBA programs, targeting executives who are constantly traveling and busy with long tedious meetings can take advantage of web-based instruction, that will help them cope with their busy schedule, freeing them from some timetables, yet earn a degree.

JM: If you consider the universities abroad, you have universities that are totally on campus, totally online, and universities that are in between, so sometimes student register for program, but they need to work 8 – 4 pm, either there are no courses after 4 pm, or not suitable to graduate, many of those students what they do they go to other parts of the world, they work during the day and study during the night, and then they ultimately go back to regular setting, or they get their degrees online.

WN: Purpose for EMBA, to make it more accessible for busy executives and people and free up with busy schedules, for nursing the purpose was to increase enrollment from outside of Lebanon. This is a different example and can't be taken as a framework, we are dealing with executives not only students. They used to meet twice a month, now they meet once a month. And the work used to be done in that extra session, is now done online. So, again their purpose was executives are busy, they have schedules they don't live in Lebanon, we shouldn't ask them to come often.

Produce Job-Ready Graduates: Defined as the skills and knowledge required from the market, job and additional stakeholders, one suggested rationale from a leading university,

was towards setting up a law undergraduate program that is of blended learning nature first, then aims are high to be part of an online program on the long run. The program is addressed towards international, regional and local law students who want to pursue their career as lawyer or attorney in Lebanon, where syndicate of lawyers in Lebanon specify that undergraduate studies be completed in the country, for familiarity and proficiency with Lebanese laws. The sessions will be in serious of face-to-face delivery throughout beginning and end of semester, and in between complete online sessions.

WN: For instance, in law, we don't have law in our university, and the syndicate of lawyers requires the student to study in the country of practice. He/she can't do it in a university abroad, so if we offer it online, then even international students can enroll.

JM: Some faculty want to develop their own teaching skills through some diplomas and courses, the only way to do that is through online courses. In fact, they are already enrolled in international diplomas and certifications, but they are not recognized.

B-Institutional E-Readiness:

Defined as the conceptualization of evaluating “the depth and breadth of the digital divide” (Chipembele and Bwalywa 2016), between technology demands and unlocking/accessing the different opportunities forth by this technology, readiness was a product of strong e-learning management capacity, faculty resourcefulness and institutions continuously testing with needs assessment and various empirical research.

E-Learning Management Capacity:

Responses highlighted strengths in e-learning management capacity expressed in the availability of reliable e-learning platforms and necessary tools, sufficient online education

resources (OER) and high competency among administrators specially those operating the e-learning.

E-Learning Platforms: All the interviewees representing private universities in the study confirmed that the necessary technology, and services infrastructure is available on their campuses, and hence, their capacity to integrate such advancements in education technology is high. For instance, all their student information systems are already automated, the use of learning management system is very common among faculty members and students, and almost all their systems are conducive to the features of achieving success in delivering quality online education. One of the seniors confirmed that 90% of the courses are offered through Moodle, and demands continuously increasing from students to utilize more Moodle by more faculty, as it is not mandatory. In another reinstitution, Blackboard is highly used.

JM: This context is great, we have everything, we have the potential, the service, information, all of this we use LMS Blackboard, it is easy to put a course online and students start using it. Infrastructure is available, we have the servers, the facilities, our labs are equipped with latest software, the problem is with the recipient, it might be slow connectivity. Technicalities are not obstacles.

JM: Infrastructure is available, we have the servers, the facilities, our labs are equipped with latest software, the problem is with the recipient, it might be slow connectivity. Technicalities are not obstacles.

Sarkis: Here in our campus, we have all the requirements to successfully run online courses, from systems and processes.

RG: Our universities are well prepared for integration of such technologies, and we are already at the piloting stages. A university like AUB has full resources, in terms of financial capacity, IT investment and resources, quality instructional designers, Moodle platforms.

Sufficient Online Education Resources (OER): Online resources are critical for online learners that help students in academics, financials and general services. Library resources are among the important pillars that provide off-campus support, giving students wide access

to electronic copies of journals, books and tutorials. Interviewees highlighted the importance of online library resources, and resourcefulness of private institutions in terms of online capacity of libraries.

JM: We call it OER Open Education Resources. Our library is really helping us out, they have huge online data resources, so basically, any student or faculty who has online material to share, such as video or audio or anything they can store it there. We have a faculty for instance in Political Science Department, he likes to record his lectures, all his lectures are recorded and are in Library. The student who doesn't attend the class, can go to Blackboard and check the link and learn it all. So in essence he attended the classes. So, we have online education in our institution running, but students are also going to class.

Competent Administrators: Many of the participants representing private universities were managing e-learning teams that comprise, faculty who are content experts, IT Department, librarian, registrar and other faculty members who are specifically from the Education Department. Universities showed the presence of a number of instructional designers and multimedia designers. These administrators have strong capacities and are collaborating towards planning, piloting, testing and reporting.

RG: Leading private universities today have small group of specialized people called instructional designers to help in setting up online classes.

WN: From A to Z, we manage all activities relates ProGreen Diploma locally, we have the experience and the competency in our staff.

Faculty Resourcefulness: Many of the participants confirmed that the availability of proficient faculty members in private universities in Lebanon, who are leaders in their field in the region and possessing the appropriate characteristics for successful online delivery present a major prospect that would help in implementing online education. Faculty resourcefulness in private universities was one element that has been highlighted in a number of interviews. Research and publications in international high-ranking journals is a must in

these institutions for faculty promotions, and hence, are used to e-learning platforms and utilizing online resources.

RG: Resourcefulness of faculty as a priority, faculty we have 140 members between the 2 American universities only, any area you want you can find someone with the knowledge to teach.

JM: Our strength is our faculty, who are subject experts in their fields, highly qualified and fluent in using Blackboard.

Needs Assessment and Empirical Research: Different answers were elicited, where seniors conveyed continuous and piloting of online courses. One representative of a big university indicated they are in the process of testing chapters in the Business department, where parallel efforts are placed in setting up online continuing education courses in the Education department, in addition they are part of a collaborative project across the nation to develop e-learning courses. Another leading American university already offered one full online course in the Engineering department that was delivered via web, and was eventually free of charge. A third university which is the most reputable in the country has already been utilizing Web-enhanced for 8 years now, developed Online ProGreen postgraduate diploma that is completely delivered online, and are sending our surveys to currently enrolled students and alumni to assess their needs, identify what does the market require, and which programs can be offered successfully. A fourth university, which is part of large network for universities operating online in the region, has already all the material, content and pedagogy, inherited from affiliated universities in the region.

JM: In the department of Psychology, Physical Education and Education Department, they are planning to deliver online courses to teacher education programs, that will run online under the Department of Continuing Education.

JM: Because I couldn't pilot the whole course, if a student pays for a course, then this course wouldn't be counted into his degree the we have a problem. I told the students we are going to pilot one chapter online. I prepared the chapter online, with PowerPoint, voice over, while I was speaking I was underlying the important things, I bought software for that. And I gave them the chapter.

JM: Faculty of Humanities and Department of DIT, they piloted 5 online courses as part of Tempus Project, Mediterranean Project (MUL), and were fully developed by our institution, included videos, syllabus, learning outcomes and list of participants in training and workshops.

RG: All schools and universities are building online material, but there is a difference between having all material online to read, and students are free to come to face to face lecture or be actually online there is no classroom that's online, and there is blended learning, there are different types. It is like going to a garden we are picking what we like.

C-E-learning As Part of Higher Education Institution's Strategic Planning:

Defined as being integrated as part of strategical planning, not only strategic asset, this factor was demonstrated in institutional innovation and chances of success.

Institutional Innovation: These are the creative ideas and thoughts locally founded to overcome some common doubts around online education, indicating the seriousness of universities in clearing all pending doubts and successfully implement online education. This factor occurred in overcoming attendance issues in online learning and overcoming other ministry doubts in meeting learning outcomes.

Overcoming Attendance Issues in Online Learning: When asked about issue related to attendance of classes and verification of identity during examinations and assessment, the representatives of the private universities all confirmed that attendance is mandatory in their institutions. However, such technical issues could be easily overcome, two of the representatives expressed that as any reliable LMS can now show the slides the students have accessed, how long have they spent there, and whether students are covering assigned

lectures or not. In addition, regarding verifying identity of the user taking the exam, and avoid any possible cheating incidents, one possible suggesting solution was to establish testing centers, where exams could be taken in universities in highly authorized centers partnering or affiliated to enrolling institution.

JM: In our university attendance is mandatory. Blackboard tells us when student checked in or not, which slide at what time, what slides how did they progress, and there are submissions, so all these are measure of actual participation.

RG: But sooner or later there will be enough online to put some testing centers.

Overcoming Other Doubts in Meeting Learning Outcomes: Another question was posed to the participants, on how to justify MEHE refusal to accredit any shape of higher education in undergraduate and postgraduate studies. The leaders confirmed that the ministry's main objection is how to guarantee and verify that students are learning, learning outcomes are met, and that quality learning is taking place. Few strategies were suggested that would help the ministry in overcoming their doubts. For instance, a colloquium examination, just like medicine graduates, could take place to verify competency. Another suggestion is to try start by offering online courses at the prerequisite levels, so that advanced course levels will test the fulfillment of requirement, and hence, efficiency of online courses.

RG: In terms of ministry, they can have colloquium like medicine, would help because if you don't pass it. The problem lies here, what if student pays \$150,000 and fails colloquium what do you do here? Can he apply again?

SS: I give a course online that is a prerequisite for another course, I don't give the second higher up course, rather the one below, if this guy didn't take online seriously and wasn't the real student will fail the higher course, I am putting my checkmarks at key points to make sure that the student are getting the learning, that's how probably I can convince myself that the student was instructed properly.

Chances of Success: Described as the areas that would show least resistance and hence could increase chances of success of any online program. Responses varied from hybrid courses to Graduate Studies and Post-Graduate Diplomas.

Graduate Studies: Most of the leaders exhibited faith in the success of implementation of online education into graduate courses and Master's levels.

RG: In graduate totally different, online would work perfectly, because being in class doesn't make sense in a hall.

WN: We have to go baby steps, meaning we do blended first, and we should start at the level of graduate studies then take it to undergraduate levels, not the opposite.

Moreover, one representative confirmed that given their experience with ProGreen, and ultimate chance would be a Micro-Masters.

RH: There are talks now with the ministry to turn ProGreen into Micro-Masters, and they agreed. It is a good starting point for online education in Lebanon.

Hybrid Courses and Continuing Education Courses: It was commonly addressed throughout the interviews that private institutions are running pilot testing of online courses. The nature of the offering of the pilot testing differed. For instance, in one university, some teacher education programs are being prepared in the Education department, that leads to a certificate. In another department, 5 courses are being piloted as part of Tempus Project, where the course design and content were fully developed in the institution. In another university, an online experimental course has been offered as zero credits, to test its effectiveness, acceptance and satisfaction. In a third university, online programs are already running under ProGreen Diploma, after they have been piloted for long.

JM: In the department of Psychology, Physical Education and Education Department, they are planning to deliver online courses to teacher education programs, that will run online under the Department of Continuing Education.

JM: Because I couldn't pilot the whole course, if a student pays for a course, then this course wouldn't be counted into his degree the we have a problem. I told the students we are going to pilot one chapter online. I prepared the chapter online, with PowerPoint, voice over, while I was speaking I was underlying the important things, I bought software for that. And I gave them the chapter.

JM: Faculty of Humanities and Department of DIT, they piloted 5 online courses as part of Tempus Project, Mediterranean Project (MUL), and were fully developed by our institution, included videos, syllabus, learning outcomes and list of participants in training and workshops.

Institutional Barriers Towards Offering Online Education

The above part represents the motives towards adopting online education in Lebanese higher education through the lens of some senior leaders and executives. Nevertheless, as expected there were concerns, that were abundant demonstrated through negative perceptions of senior executives and leaders of institution on the possibility of adopting online learning systems, presented in the below Table 4.45.

Key Theme	Theme	Sub-Theme	Sub-Theme Components	Codes
Barriers	Higher Education Institutions	Private Institutional Executives	Legalization and Acceptance	Syndicates
				Accreditation Bodies
				Preference Blended Learning
			Student Enrollment	No-Lecture Institutions
				Education Standards
				Diploma Mills
			Financials	Forecasting Budgeting
				Forecasting Revenues
				Pricing
			Online Instructors	Uncertainty in Teaching

Public University Executives	E-learning Capacity	Undergraduate Students
		Self-Regulation
		Increased Workload
		Less Controlled Classes
		Job Added Value
		Internet Connection
	Ministry of Education	Technology Infrastructure
		E-Learning Awareness
		Strategic Planning
		Pedagogy Expertise
		Corruption
		Credible Systems
		Decision Making and Implementation
		Control of Private Universities
Blended Learning	Online Component	E-Learning Supportive to Campus Learning
		Faculty Resistance

Table 4.45: Institutional Barriers Components

The key theme is proposed to be Barriers, with Institutional Executives as main theme, where four sub-themes, namely: A- Private Institutions Executives, B-Public University Executives and C-Blended Learning and a number of sub-theme components and codes.

A-Private Institutions

Defined as lack of acceptance of online education at the highest strategic management level due to issues related to legalization, student enrollment, financials, student characteristics and online instructors.

(i)Legalization: Among the clear expressed barriers to implementing online education, was perceived lack of legalization among several other key stakeholders namely, syndicates and charters, accreditation bodies and clear preference for Blended Learning Approaches.

MEHE appeared not to be the sole barrier towards illegalizing of online education, but also the syndicates and charters, that wouldn't accept online courses abroad, or locally, in the credits counting towards obtaining a degree, specially Engineering. Such stances push faculty and deans away from online education, to an extent of refusal to participate in some piloting and testing of online learning in their classes, not even one chapter of a course.

JM: It is not the MEHE by the way only, but also the syndicates, because if you want to join the charters of engineers, and you say that you studied online, they will not consider it, so not only ministry of education but also the chambers. Charters of engineers, architects, etc. If the courses are done online they are not approved.

Based on some of the interviewees' responses, online education presents another set of challenges related to compliance and meeting local, regional and international accreditation bodies, that esteemed universities have worked hard to reach throughout the past years. For instance, in two of the leading American universities in Lebanon, accreditation is obtained from NEASC (US), ABET (US), SUNY, New York Registration, Lebanese Registration and other European accreditations. In order to offer any sort of online courses, a new accreditation self-study that covers a minimal of 1 or 2 years post approval should take place, which operationally is very difficult and challenging.

RG: It is like going to a garden we are picking what we like, each one picks his favorite from each option to meet local, regional and international registration and accreditation requirements. And those are very tough. In our university we have NEASC accreditation from US, we have professional accreditation from ABETT, and New York Registration, Lebanese Registration and we have several European accreditations, if we go online we have to revise all those, that is not simple, that may require self-study of one or 2 years. If you are offering online, you have to actually change your accreditation self-study and you have to get reaccruited, it is not only Lebanon, the European and American are much much worse, when it comes to online, they say ok show us, either way we are in trouble.

Interviewees representing all private institutions confirmed that the global trend is for blended learning and most of the international accreditation bodies prefer blended learning approaches over online education, hence, if in the West it is still controversial, in Lebanon it is hard to be applied.

SS: Internationally still online education is not very well accepted, they advised us to concentrate on blended learning.

(ii) Student Enrollment: A clear fear on student enrollment was revealed through the highest institutional executives of represented universities, demonstrated through ‘no-lecture’ institutions, education standards and diploma mills.

Senior leaders emphasized that running online classes doesn’t meet the interests of reputable universities, as it is not profitably viable for them to give in their classical learning and students to online classes and virtual students. Esteemed universities with more than 100 years of proven records will most likely not give in their classical education to online, otherwise, it would be a very dangerous and reckless step to do.

RG: You can’t abolish existence of institutions that have been for 100s of years in a second, they will resist it more than ministries themselves, because the ministry is run by committees made up from executives from these universities, and this is not out of their interest to close their doors, so they will not push for it frankly they will do something else, so that’s very dangerous.

AA: Blended approach needs to work – full will not work and shouldn’t work. Universities that would go 100% online am not sure how would it work on the future.

Some universities expressed fear in accrediting online learning, as it will open the door for some emerging institutions to offer programs and degrees with minimal standards and quality of offering.

SS: We don't believe in opening the door for online education, because of corruption in Lebanese Higher Education, quality of education will diminish.

Such institutions will be approved and licensed under pressure from external forces, leading to easily-obtained degree. This scenario will only be the beginning for similar institutions to emerge one after the other.

WN: They are afraid more universities will pop up, and end up with diploma Mills.

SS: We don't want OL, because some universities will make use of it. Already many of them don't have proper attendance system, poor quality, let alone if online learning is accredited. Ministries won't be able to control it. Blended learning is good but control should come from inside.

(ii)Financials: Described as financial pressures from implementing online education, that might have significant impact on the institutional planning. This factor was depicted through difficulties in forecasting budgeting, forecasting revenues and pricing.

A major problem that was highlighted through the interviews, was difficulty in forecasting income if online degrees were to be approved and functional. Two participants revealed that online student may choose to be enrolled in different course in many universities, some of them local and some are international. The university will not be able to confirm whether the student will commit to the assigned study plan.

IS: The plan for full blown online degree am not with to start with, you have to start introducing online elements and blended elements and see the impact. We tried it in Pro-Green, students can go in and out without proper tracking.

AA: From an income perspective, the university can no more forecast an income, and universities will shy away

One of the responder described the situation as the student's behavior is like a 'ghost', and it is very difficult on administrators to plan budgeting with 'ghosts', as the student is one day

in and on another is out. This option becomes viable only if the enrolling university has an extremely large student body, where with online teaching fixed costs are low.

RG: If I have to do the operating budget, the student is like a ghost today here tomorrow not. It is super dangerous for an administrator to be working with ghosts, students' physical presence is important for universities in terms of forecasting budgeting and income.

Another issue that emerged was the pricing by several leaders, where at the time being online classes are being piloted, but they have to be offered for free.

JM: We are offering these online classes for free, and later on how they be priced no one knows

(iv)Online Instructors: Described as resistance among online instructors of ProGreen Diploma and those teaching Blended Learning for implementation of online education at undergraduate levels due to: uncertainty in teaching, self-regulation of students, increased workload, less controlled classes, job added value and internet connection

Uncertainty in the level of understanding among students is a main concern shared by many respondents.

DK: Even ProGreen faculty are still not confident in the levels of interaction, and looking for ways to enhance communication, they are suggesting different ways. They will resist teaching online in regular classes in campus, our experience was good but not easy.

Most of the respondents expressed that teaching online presents in an increased workload that requires major dedication and innovativeness to be able to handle it successfully.

RN: This is a common concern from faculty teaching blended courses, and if we look at the colleagues from the English department, they teach and grade writing for classes of 60 students. Unless there is few in the class, grading 60 posting on forums, would be unbearable, just the hours you have to put to give feedback is long and tedious.

Many respondents confirmed that undergraduate students lack self-regulation in terms of maturity to take charge of their own learning, which is required in online learning.

WN: Lessons learned, students tend to follow instructors, our culture is still not ready for online education at undergraduate levels. The mentality of the students is not mature enough, in taking care of their lessons and lectures alone without the spoon-feeding method and physical presence of faculty.

The concern of job added value was shared by three participants in a way that the main job of faculty is teaching, research and meeting department requirements. These activities would bring about promotions and professional ranking, any forth activity would shift focus that is not worthwhile, despite financial incentives.

IS: If a faculty is at a professional rank, sheer research will get him/her promoted, and not teaching online classes. Substantial amount of efforts required to set up good online courses, so at a certain point teaching would be a burden and time consuming, hindering progress in research, and their faculty would be reluctant.

Internet connection remains a major problem, where inconsistency makes it hard on students to complete online assignments.

RN: Many students suffer from lack of power or internet connections at home, we try to be flexible by extending deadlines.

(ii)Ministry of Education: Described as absence of clear direction and intervention from the MEHE that regulates the public university, expressed in terms of credible systems, decision making, implementation and control of private universities.

Responses among senior leaders confirmed that MEHE is not only respondent to the needs of private institutions but steered by their interests and benefits rather than national welfare. And banning online education is linked to the private institutions' request.

AA: The expertise who are decision makers in higher education policies in the MEHE are representatives of private universities. And if the ministry is refusing to accredit online education, is because there is a consensus among these decision makers that running online programs is not of their interest and will only negatively influence their business and student enrollment.

Respondents confirm that MEHE lack the capacity to decide on whether to accredit online education or not, due to the lack of reliable and credible systems characterized by absence of clear strategic plan with provisions.

MS: There is no need for strategic plan for online education, because this is not how Lebanon is run.

In addition, respondents of three universities demonstrated how slow decisions are taken, once done, implementation and action is slower and not reliable,

AA: They drafted technology plan for 2010, we are in 2015 and yet nothing to show.

WN: We don't wait for the MEHE to come and visit us, we go to them.

Almost all of the senior leaders clearly articulated during the interviews that the nation ranks high in corruption to-date with relatively low rule of law, that is widespread in most departments and ministries. They expressed fear in accrediting online learning, as it will open the door for some emerging institutions to offer programs and degrees with minimal standards and quality of offering, whether related to attendance and examinations. Such institutions will be approved and licensed under pressure from external forces, leading to easily-obtained degree. Given the corruption, neither the MEHE nor any other authorized entity will be able to control it.

SS: We don't believe in opening the door for online education, because of corruption in Lebanese Higher Education

RG: Ministry wouldn't be able to control the situation

B-Public University:

Defined as reluctance to adopt online education by senior executives due to E-Learning capacity and MEHE.

(i)E-Learning Capacity: This factor is described as fragile and depleted systems far from the integration of advanced e-learning software, demonstrated through: technology infrastructure, e-learning awareness, strategic planning and pedagogy expertise.

Absence of technology infrastructure in the public university was clear among the respondents, who confirmed that classical systems of displaying content is available, with use of basic technology such as PowerPoint.

MS: Faculty in this university are among the most qualified and experienced, the levels of education that we provide are of the best, however in terms of advancements in technology and pedagogy, that is not applicable on the public university, classical and traditional learning are still overriding.

Another two leaders revealed that absence of state funding for the only public university in Lebanon (as well MEHE) is to be blamed for shortage of technology infrastructure. Financing covers only operational cost, and any development is through donations.

MS: The \$160 billion covers only operational cost, and is not enough to expand infrastructure of the public university, knowing that it has 45 branches.

Strategic planning is far from embracing online education, and management is resistant to integration, because of static situation where decisions are not easily taken and implemented.

AA: There is no point to discuss implementation of e-learning, since our university is far from this level, and it is not accepted by Ministry.

AA: The public university has 45 branches scattered geographically across Lebanon, decisions are very hard to be taken where they required more than 35 signatures.

Responses revealed that faculty and staff are not aware of the advancements in online education, its importance, the needs, and the opportunities it can bring forth.

MS: Many seminars are being conducted in an attempt to raise the readiness of faculty and staff, but it hasn't reached a stage to be aligned with e-learning methodologies.

Many of the responses indicated the absence of pedagogy expertise who can steer the pedagogy and learning methodologies in the university to be compatible with online education.

DK: We don't have instructional designers, and the job of Education department is in teaching students only.

C-Blended Learning:

Described as absence of real forms of blended learning approach in the current practices in terms of the online component in higher education institutions classrooms.

Online Component: The responses delineated on increased usage of blended learning among two of the 5 universities represented. However, despite the heavy usage of technology and e-learning platforms in private universities, majority of current practices in integrating e-learning models is restricted at dropping sessions, hence, demonstrated in e-learning as supportive to campus learning and faculty resistance.

Five interviewees confirmed that blended approach is being used for the purpose of student individual preparation and submission of assignments rather than delivering interactive lessons via web. Hence, the presence of e-learning is a mean to support classroom teaching rather than learning through web-instruction, which is the core of blended learning.

RN: They usually drop one session in a week for students to undergo assignments at home and submit, while faculty would be attending conferences or on a business trip.

IS: Many faculty have turned their regular courses into blended, 25 – 30% online, rest face-to-face, but is learning happening through interaction with e-learning software, not really.

Faculty resistance to blended learning was also noticeable in interviewees answers, where private institutions are trying to push for it, but still they are struggling to implement.

SS: We have all the tools and platforms, we are using it, but we don't want pure full fledged online programs, because not all faculty are familiar and happy to teach blended as a start.

WN: We are struggling with Blended Learning currently.

4.4.2 Discussion of Findings

The above findings will be discussed in the light of local and international literature pertaining to barriers at institutional leadership level. Specifically, they will be compared against the pre-study model, that was a consolidated report on the documented barriers in literature towards the adoption of online learning systems in Lebanon.

- **Research Question: How could the faculty acceptance of online education be described?**

The interviewees represented 5 universities, 3 among them are of the most prestigious in Lebanon with long legacy in quality and reputation, the fourth is the public university in Lebanon, the only state university and the fifth is a branch of a main campus that is completely delivered online in different Arab countries, validating the reliability of results.

Perceived Usefulness of E-Learning as Strategic Asset

Online education is perceived as a strategic asset, that is considered as strong prospect towards adopting online education, serving four purposes, namely, (i) increase enrollment through serving untraditional populations, (ii) increase international student enrollment, (iii) respond to space constraints, (iv) support student career advancement and producing job-ready graduates and (v) increasing learning outcomes. Particularly, increasing international enrollment presents as a bright step to counterbalance the negative influences from the political instability and depression in economy. Some studies report that funding and revenues within universities is computed and estimated without the income from international students, hence, generating additional revenues.

Findings on the purpose-serving of online education in Lebanese context are in line Bacow et al. (2012) rationales for offering online courses among American universities in North America. Particularly on the issue of increasing learning outcomes, this factor didn't show in abundance in interviewees' discussion, where it was highlighted by one interviewee only. However, even in Bacow et al. (2012) results, improving learning outcomes appeared as a motivator, but "aside from a few institutions' references to improvements in retention or pass rates, most interviewees did not explicitly mention a desire for better learning outcomes" (p. 13) as a key factor to increase offering of online classes. Moreover, the nation is still at a stage as described by Texler (2018), where "cultures and ideologies clash, where education and employment are no longer stable and secure, where universities and colleges are under unprecedented pressures, where the technologies and trends of educational technology represent a crowded and chaotic space" (p. 1), hence a critical examination of distance learning is still at early stages, prior to assuming better effectiveness. Therefore,

findings from current study on Lebanese context aligned with US 2012 results. However, the researchers surfaced an additional rationale, managing costs. Unlike Bacow et al. (2012), managing costs appeared as a barrier in the current research, where it was expressed through a senior executive leader of one of the universities embracing ProGreen Diploma program, that online education promotes difficulties in forecasting incomes, budgeting and revenues. One reason for discrepancy, may be the experience of ProGreen Diploma itself, where the nature of students are postgraduates, enrolled in the program from personal satisfaction and career advancement rather than grades and degree seeking. Hence, students' course registration is dependent upon several factors and personal circumstances, such as: pressure at work, frequent relocating, family circumstances, different aspirations, etc., making it hard to forecast student presence and associated revenues.

Among the important reported barriers were from Abu Chedid and Eid (2004), illuminating on poor strategies in widening access to technology in higher education institutions, and therefore, stretching the digital divide between Lebanon and the rest of the world. The new picture is as follows:

Group 1: State university, clear absence of element of advanced technologies such e-learning platforms or learning management systems.

Group 2: Blended learning is part of the institution's strategic planning in all represented private universities.

Group 3: Operationally, only one university has blended learning as a strategical goal with clear provision on best models suiting their revenue growth and student recruitment, where

some work has already been accomplished, paving the way for possible online learning modes of delivery models. This university has a strong competent e-learning task force that is steering blended learning and provisions for online education.

Current Practices in Private Versus Public University

Clear and serious strategies pertaining to integrating blended learning approach showed in the responses of many interviews, however, provisions and commitment were limited to one private university only, presenting as a barrier to adopting online education. The progress in the field of technology and e-learning platforms didn't happen in short time, rather a product of long evolutionary stages, during which classical instruction was supplemented by Webenhanced in one university, FC (Flipped classrooms) in another university, etc. However, blended approach hasn't yet been widely implemented, presenting as a challenge to adopting online education, The adopted blended learning seeks to dropping sessions for the purpose of completing assignments or reading material, rather than learning via web. The picture in the public university hasn't drastically changed, where usage of technology is limited to e-mails, knowing that students are using their personal Gmail or Hotmail account rather than university account, and PowerPoint presentations. E-Learning platforms don't exist, and if there is any the senior leaders that were interviewed weren't aware of. Thus, it could be argued that to-date poor strategies to widen access to advanced technology still overrides the public university strategic planning in Lebanon, however, the private universities have come a long way in achievements about technology and its integration into learning and administration. Unlike to US, where the vast majority of public universities

confirmed that “online education is critical to their long-term strategy” (Center for Educational Innovation, p. 2), that is relatively higher than other private institutions. Comparison between US and Lebanon, developed and developing country, is unfair to Lebanon that is known for depressed economy and decreased state funding on education and other services.

The above findings are suggestive that decisive actions to implement e-learning is still generally absent, except in one leading university in the field, among highest academic decision makers and university councils, agreeing with Abou Chedid and Eid (2004). The main reason for shortage in clear-cut plans is the fact that initiatives and implementation plans are still at the infancy experimental stage, where “such as combining the new ideas and advanced educational technologies of online education with existing methods” (2016).

Earlier research suggested that implementing online education will cause abrupt change in learning pedagogy, which academic decision makers and leaders can’t accommodate because of lack of plans for smooth transitions between classical and modern. As a matter of fact, findings from the MEHE interview data analysis, to be presented in detail in next section, showed that such assumptions hold true with respect to MEHE and public education, where the dominating pedagogical and learning models are too primitive that wouldn’t allow for the rise of advancements in teaching and learning such as online delivery. However, represented private universities proved to be far advanced, and piloting and experimenting is continuously ongoing to assess potential success of online courses. These universities proved the presence of adequate strategies in leveraging technology to expand enrollment, achieve competitive advantage and revenues. Such attributes in gaining superiority over

other institutions and outperforming has been well described by the Center of Educational Innovation (2016) as “a way to address some of the challenges higher education institutions face and extol as a tactic for staying competitive” (p. 1).

Institutional E-Readiness

Counter to Abu Chedid and Eid (2004), the represented private institutions showed strong e-learning management capacities and skills among personnel to successfully run, maintain and continuously upgrade the systems, due to increased investment in technology and injection of funds in training and development of faculty and staff. One of the managers of e-learning team indicated how active his department is in taking part year after year in international conferences for Moodle best practices taking place in US and Europe, and different congresses for exchange of expertise and success stories. Such professional development delivered a strong and reliable support system for sophisticated technology integration, where a set of classes are now replaced by pure online sessions, hence, presenting a departure from classical modes of delivery. Moreover, some researchers argue that the work of Arab Open University (AOU), was obstructed due to the absence of legislative policies on accreditation and recognition (Abou Chedid and Eid 2004; Baytiyeh 2016). Findings from current research study shows that the position of AOU towards this matter, whether to accredit online education or not, is vastly driven by fears and concerns on the rise of diploma mills and growth of enrollment in emerging institutions offering poor undergraduate and postgraduate online education, due to the corruptive state of the higher education sector in Lebanon. Rise of such universities poses high risk on mid-range universities like AOU resulting in shortage of recruitment and enrollment. And accordingly,

the AOU stance was consistent with the MEHE on possibility of legalizing online learning and only reinforces the legislative worried brought forward by the ministry. The fear brought forward by AOU was also shared by almost all executive leaders and the MEHE itself, that will be further elaborated in the next section, which is legitimate because the country still ranks high on corruption based on Washington-based NGO surveys and how rule of law is poorly perceived and practiced (Annahar 2018). Apart from that, not at any stage, were the AOU, through their most senior executive leaders, open about their modes of blended learning, provisions for the near future or plans for possible smooth transitions. Such an attitude was surprising and unexpected, as given the nature of the university, their mission is required to be vibrant in changing the pervasive ideologies among the Lebanese community and scholars on the importance of online education. As a matter of fact the international literature is shifting towards a trend that online education will compensate for the reduction in student enrollment and completion rates, through saving costs and increasing learning effectiveness (Center for Educational Innovation 2016; Allen et al. 2016). The US specifically showed downturn in traditional enrollments between 2011 and 2014, and the growth in online enrollment compensated for reduced revenues and profits (Center for Educational Innovation 2016).

Faculty resourcefulness in private and public universities was highlighted as a key prospect for possible offering of online education. SASCOC (Commission on Colleges 2014) distance education policy statement, calls for abundance in the availability of faculty who are qualified to develop, design, and teach the online courses, with support and training. Earlier findings on faculty readiness, indicated high readiness level among faculty to teach online

courses, although readiness is different than attitude and behavioral intentions. Where less than 50% of participating faculty demonstrated willingness to teach online classes. Yet, faculty resourcefulness remains a strong feature of the higher education system in Lebanon, who are proficient in subject areas.

E-Learning Is Part of Higher Education Institution's Strategic Planning

Another expressed prospect was that e-learning is now part of higher education institutionalist strategic planning. Leaders were keen on finding ways to overcome attendance issues and overcoming doubts in meeting learning outcomes, that MEHE in earlier section considered them as concerns. Regarding doubts in attendance and taking online exams, it was confirmed that the e-learning platforms (Blackboard, Moodle, etc.) utilized in universities in Lebanon, allows the instructor to see whether the student is accessing the slides how long is he/she spending on the learning tasks, etc. Such systems are able to verify the identity of the user during exams taking. However, the most important is that taking online exams could be replaced by having testing centers in reputable universities affiliated to enrolling university and close to where the student resides, overcoming the doubts in integrity. Such a method is creative at the level of Lebanese context, as it has proved to be successful in many universities in US, such as NC State University (NSCU 2018) and Victoria College (VictoriaCollege 2018) that has been established in 1925. Students are asked to prove authentication, presenting photo, ID, and secured login and password, in compliance with Southern Association of Colleges and Schools, Commission on Colleges (SASCOC) (Commission on Colleges 2014), distance education policy statement. Along same levels of creativity, few strategies surfaced on how to implement e-

learning in a way that ensures learning outcomes are met among their graduates. Leaders suggested to have online students sit for colloquium examination, to equivalize their degrees, or offer online courses at pre-requisite levels, so that success in transferring knowledge is assessed in advanced courses. Moreover, universities are shifting many of their traditional services online, beside course registration, such as advising and orientation day program.

Faith in Success of Online Education in Graduate Programs

One clear prospect was the faith of leaders in the success of online education at the Masters and Doctoral levels, due to the maturity of the candidates in keep up with their learning tasks first, second their busy schedule in their current positions, that online learning would free them from timetables and attending classes. On the other hand, reluctance to offer online education classes or degrees to undergraduate students, and programs requiring laboratory work appear to be a barrier, hindering development of online education.

Lack of Acceptance and Legalization Among Several Other Key Stakeholders

Among other prospects, was the negative attitude towards MEHE among some of the participants, which means that once the ministry removes the sanctions on online education, many institutions will embrace it. Similarly, the resistance among the syndicates and charters to not recognize classes taken online, is understandable, as attestation of any degree or course is first obtained from MEHE, and if the latter approves then syndicates and charters' position will be different. Sufficiency of Open Educational Resources (OER) was also a key aspect brought forward by all participating private universities in the study, indicating a shift in the culture. The concept of Massive Open Online Courses (MOOCS), denoted by “the

offspring” (McGreal 2017) of OER isn’t yet functional in Lebanon, however OER is considered as an evolutionary step that play a significant transformative role in achieving the “Sustainable Development Goal 4: Quality Education (SDG4) by UNESCO in 2004”, (McGreal 2017) and in 2012 in Paris Declaration. OER is now available in libraries of participating private universities, either to supplement students’ learning in face-to-face classes or present as learning tasks in courses of hybrid nature. The benefits of OER on developing countries in Lebanon would be huge, as it would be “attempting to reach a global audience of students and staff on campus and n open and distance learning environments” (Hatzipanagos and Gregson 2015, p. 97). This shift in library resources in consistent with features of online education, indicating that even if slow progress is reported, the Open Access movement is on the right track and in supportive of advances towards adoption of online education systems.

Financial Difficulties

Finally, among the most important findings are two aspects, first fear on student enrollment and revenues through establishing online programs, and second the resistance of Pro-Green faculty to switch to online modes of delivery in full fledge programs. On student enrollment, in an important conversation, one of the interviewed senior leaders highlighted “you can’t abolish the existence of institutions that have been for 100s of years in a second, they will resist it more than ministries themselves, because the ministry is run by committees made up form executives from these universities, and this is not out of their interest to close their doors, so they will not push for it frankly they will do something else, so that’s very dangerous”. Such objections are almost similar in context to the experience of the world’s

top ten and wealthiest higher education institutions, Stanford University upon piloting online courses, where criticism came from some of the students who revealed that “they didn’t come to Stanford to watch their professors perform via computer” (Bacow et al. 2012, p. 9). Such doubts and concerns are understandable, however, what this research is suggesting is in line with international efforts, where campus students and online students wouldn’t share courses and curricula, and in some parts of the world, they don’t even share faculty members or campuses such as Southern New Hampshire University, where online campus is far from classical campus in location. And the hope will be over the next few years, where innovations and advancements in technology and pedagogy will make their way to offering online courses in classical programs. These experiences are not too odd on the Arab world, where Qatar Campus of Georgetown University is making use of the flexibility of distance learning in using the online classes from the main branch. Regarding the negative perceptions of Faculty teaching Pro-Green Diploma, then serious commitment should be put forth to understand the rationale behind their attitude, is it the increased workload versus worth of efforts pertaining to student achievement or personal accomplishments, the doubts in reaching out to students, issues in confidence, etc., then strategies to overcome these obstacles should be drafted, such as additional monetary rewards, psychological motivation, etc.

Accreditation Difficulties in E-Learning

Leaders confirmed the difficulty in meeting local, regional and international accreditation bodies needs if online learning was to be approved, as it requires new self-studies. This challenge was highlighted in many research studies such as Anis (2011), “initial partial

application of e-learning in some institutions in Egypt led scholars to realize that the following issues have been identified to pose a challenge to the application of e-learning to engineering education” (in Abdellah, 2007; Peterson, 2002), such as accrediting e-learning-based engineering programs. Accreditation of online programs appear to be more complex than their counter traditional programs as they require to carry on more tiers of compliance and sets of criteria, especially given the absence of national policies and procedures on online accreditations, further to the shortage of regulatory frameworks.

4.4.3 Study 3 Model

The above discussion led to the formation of **Study 3 Model 1**, Table 4.46:

	Prospects	Barriers
People (Institutional Executives)	Online education as strategic asset and part of strategical planning	Fear on student enrollment and revenues
	Institutional Readiness in private institutions	Difficulties in forecasting income and revenues
	Ongoing piloting and experimenting of online courses and Surveying students	Perceived resistance among faculty teaching blended and online
		Difficulties in meeting external accreditation bodies requirements
		Lack of acceptance of integrating OE in undergraduate
		Perceived resistance among Syndicates and Charters
Technology	Availability of strong e-learning capacity	Supportive to campus learning
		Lack of Institutional E-Readiness in Public University
Services	Faith in success of OE in postgraduate studies	Absence of e-learning practices
	Overcoming ministry doubts in meeting learning outcomes and other concerns	Absence of blended learning

Table 4.46: Study 3 Model

4.4.4 Comparison across Study 3, Study 2 and Study 1

Comparison of findings across dataset from Study 3, Study 2 and Study 1, Figure 4.19, show that common areas among the stakeholders included: general perceived usefulness of online pertaining to students' needs, namely through access to education, learning efficiency, career advancement and personal development. General reluctance of adoption at undergraduate studies, resistance to change and doubts in self-regulation skills among students that are necessary to achieve success. Faculty and students shared adequate readiness levels, increased acceptance, exposure to online learning software, effected academic rigor compared to face-to-face and more workload on the students. On the other hand, findings from faculty study and institutional executives show absence of e-learning practices, questions on job relevance of online education compared to workload, and preference for blended learning. In addition, important conclusions were reached regarding private institutions: namely, online education is a strategic asset and part of strategic planning, resistance among online faculty to fully integrate online education, commercial and financial fears especially regarding student enrollment, corruption and forecasting income/budgeting. The public university was characterized by complete lack of e-learning management capacity and readiness for online education. As important stockholders and end users, student question the market acceptance, have doubts in financing capabilities and would consider online education only as secondary degree form reputable universities. Faculty show pedagogical readiness and are affected by the social influence and public esteem of online learning.

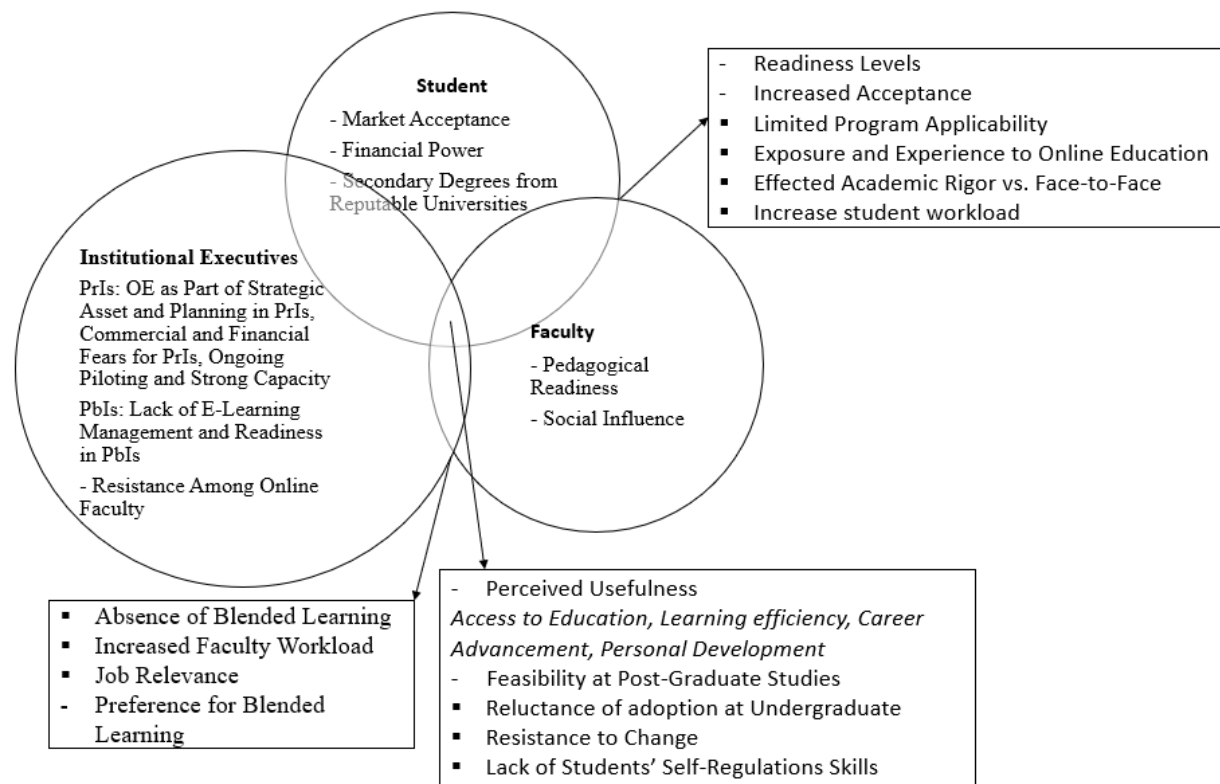


Figure 4.19: Graphical Representation of Study 3, Study 2 and Study 1 Results

4.4.5 Summary

Analysis of Study 3 employed qualitative research methods where thematic analysis was used to generate findings. At the institutional level, general resistance was yields at the level of most senior executives, while further downwards in hierarchy the better acceptance is. Senior executives' main fears were on effected student enrollment and where their institution become of 'no-lecture', and turning into being unattractive for students, and in the light of corruption and lack of MEHE empowerment. Financial difficulties surfaced in terms of forecasting income and budgeting, and resistance among online and blended teaching faculty. Further barriers in meeting accreditation bodies needs and syndicates and charters

showed prospects appeared to be in the private universities where online education proved to be strategic asset and part of strategic planning, high readiness of online education and characterized by continuous piloting and experimenting. Major barriers showed in the public university lacking sufficient technology infrastructure and pedagogical capacity to acknowledge and consider the opportunities of online education brought forth. General consensus on the practicality of implementation of online education in postgraduate studies levels, and institutions showed almost absence of blended learning, although it appeared to be the area of least resistance to launch online programs. Analysis were discussed in the light of literature, and then the comparative Venn Diagram model was expanded to include Study 3 findings.

Next section will discuss the analysis and findings from Study 4 on MEHE perception towards adoption of online education, where the comparative Venn Diagram would be further expanded first, then a model on the links and association between different stakeholders would be presented.

4.5 Study 4 on Perception of Higher Education Regulatory Body

From a market perspective, stakeholders are the major constituency of an organization. Likewise, in e-learning and higher education, stakeholders are the groups that are affected by it. To maximize the chances of success of any e-learning system, the responsibilities of each group should be undertaken, as well as meeting their needs and concerns. The following section will analyze the interview conducted with the general director of the MEHE in

Lebanon, to identify the possible concerns and motivations, then in return derive what is considered to be as a barrier at decision making and leadership to adopt and implement online education, and the motives. Discussion of findings will follow the analysis, where results from the interview will be compared against findings generated in earlier sections in the current research understudy, along with local literature regarding Lebanese context and international literature.

4.5.1 Qualitative Data Analysis and Findings

- **Research Question: What is the perception of main legislative academic decision makers in Lebanon towards adopting online education?**

Accreditation bodies are the organizations certified to assess credentials and evaluate the quality of any institutional offering. In Lebanon, the only accreditation agency is the Ministry of Education and Higher Education (MEHE), where only those institutions showing compliance with minimal standards of quality and rigor are only issued accreditation. The prospects and barriers of the MEHE will be presented based on the analysis of the interviews with the General Director of the ministry and another senior executive, where the first in hierarchy ranks just after the Minister, hence, is a powerful decision maker in the operational status of online education in Lebanon.

Barriers:

Questions were directed in a way to understand the motivation, the concerns, how to overcome the barriers, and how would a national strategic plan for implementation look like.

For the purpose of thematic analysis, this study proposes Barriers as key theme and MEHE as main theme, two sub-themes: A- Traditional Systems, and B- Stakeholders, and a number of sub-theme components and codes, Table 4.47.

Key Theme	Theme	Sub-Theme	Sub-Theme Components	Codes
Barriers	MEHE	Traditional Systems	Policies and Procedures	National Agency for Quality Assurance
				Regulatory Framework for Online Learning
				clear strategic vision and planning
				Empirical data
		Stakeholders	Advanced Pedagogies	Social Presence
			Corruption	Online Assessment
				Empowerment
			Resistance	Abundance of higher education institutions in Lebanon
				Private Institutions
				Community
				Self-Regulation Skills
			Public University	Technology Infrastructure
				Faculty Training and Development

Table 4.47: MEHE Barriers Components

A-Traditional Systems:

Traditional systems is referred to be the opposite of the fundamental infrastructure of a modern and successful ministry of education, characterized by application of latest concepts of pedagogies, quality assurance and organizational structure. This study argues that primitive systems appear to be controlling the ministry actions and activities demonstrated through primitive policies and procedures, absence of advanced pedagogies and corruption.

Policies and Procedures: Described as the fundamental provisions in the MEHE on how they plan to conduct their regulatory actions, and the specific methods that will be employed to govern policies in daily operations. This factor was a product of national agency for quality assurance, regulatory framework for online learning and clear strategic vision and planning.

The interviewees highlighted the absence of national agency for quality assurance and standards, as a main challenge that would affect the operational status of the ministry, shaping its processes to be incompatible with the advancement in the concept of education and technology. And accordingly, will be considered as major barriers impeding any possible option to acknowledge and accredit such modes of delivery.

GG: Main reason for our reluctance in progressing the online education file is the lack of fundamental national quality assurance framework.

AJ: As a ministry it is beyond our capacity honestly, it is not even our job, the role of ministry is to license directly, but not to assess and ensure quality assurance. It needs separate entities and bodies. In 2014 we put into action a new ministry resolution, which is relicensure and reaccreditation of programs. It was founded in 2014, with intentions that reaccreditation will happen every 3 to 6 years. We have started implementing, but it required humongous amount of efforts and work.

Strategic planning is a business growth strategy for organizations, that includes its philosophy and aims, the strategies and actions that will needed to be incorporated to fulfill the aims. The interviewees confirmed that to date the ministry lacks any kind of strategy that includes strategic objectives, desired outcomes, and strategic planning. The only available strategy is the one drafted by the interviewee himself in 2007, which is not national, rather personal and had been put into action due the absence of viable alternative.

AJ: Basically, we don't have a strategical vision in the ministry, we don't have any strategy. We drafted one in 2007, but it is my personal strategy rather than national strategy, more of general provision. We followed it without having in hand policies that should be incorporated

at earlier stages before we any strategy observes light, but we need it. Accordingly, we worked about licensure, relicensure, forming committees for assessment and standards, etc.

Online education requires a unique set of academic standards that is different from classical modes of delivery. It aims to verify the capacity of enrolling institution in providing appropriate pedagogy, assessment system, adequate technology and LMS support and training, and the presence of reliable platforms for learning such as LMS. The interviewee confirmed that MEHE serves as a regulator, however, standards for online delivery doesn't exist, hence, contributes as an additional major factor to disapproving recognition of online education.

AJ: But our standards and conditions are too strict to accredit online programs. Universities should have experts inhouse that would teach the personnel and academic staff how to develop course content, there should be instructional designers, courseware and pedagogical expertise.

Scarcity of empirical was clear in the General Director interview. He confirmed that Ministry is following up on online education topic and running debates, closed discussions, and piloting. However, all what has been conducted on ground was one experimental study and a call for panel discussion, and both resulted in shifting direction from adopting online learning.

AJ: The leading e-learning university in Lebanon is a failing example for online education. For students who are weak in English, we decided instead of attending face-to-face, let us try to have it delivered online since they have all the necessary tools and platforms. Results were bad, students weren't learning anything and their competency levels in English didn't improve.

GG: In another leading university, we did a concentration day on online education with panel discussion on how of a viable option it is in the Lebanese context. All the participants, who are mainly university councils and presidents from private institutions, confirmed the need for blended approach rather than full online.

Advanced Pedagogies: Distinguished as lack of ministry familiarity with the fundamental features of online delivery modes and processes, pertaining to the absence of social presence of the student in online classes, and the legitimacy of online assessment.

The participants highlighted the importance of the social and cultural aspect of a university. The role of an enrolling university is not limited to offering quality learning, rather enhancing the interpersonal and social skills. These skills are important for the functioning of the student in the society and development of the society, which online education basically lacks.

GG: In terms of students, they should come and enroll for social impact, exchange of ideas, exchange of civic engagements, communication specially for country like Lebanon.

The General Director of MEHE expressed clear concerns regarding measuring student learning in virtual environments, where online assessment remains an issue that requires more investigating and considered as a major barrier towards underestimating the power of online education in meeting learning outcomes. To date, online assessment is not reliable, and data from literature is not sufficient on covering all aspects to ensure cheating is not happening.

AJ: Up till now, online assessment is not reliable, they say cameras are there, what about the other side of the camera, maybe there is someone helping me, on the screen etc. It is not hard to cheat in assessment.

Corruption: One major articulated worry is a result of toxic politics and corruption spreading across all governmental entities in Lebanon, that is demonstrated in ministry lack of empowerment and abundance of higher education institutions

The General Director revealed that MEHE in Lebanon lacks the empowerment to control possible negative repercussions from online education. If online education is accredited, any university that doesn't show readiness and capacity, yet is supported by a minister or powerful individual, will be approved in the easiest possible ways. Such universities will take the shape of diploma mills, and the ministry will be unable to put an end. Therefore, unlike neighboring countries.

AJ: In neighboring countries like UAE they are confident, they have a very powerful and authoritative CAA that is able to control the quality. In this country, we are the main legislative authority as a ministry and yet they will win over us, if we open a door to accredit online education. Receiving online degree from Harvard, is different than some office in some country around the world giving out cheap online degrees, then we are asked to equalize.

AJ: If one minister decides to open an online university, with minimal compliance that doesn't qualify to be accredited, we are forced to approve given his authority. Then this university will be diploma mill, who will be able to control it?

It was made clear by one of the interviewees that Lebanon has 49 universities, that are accredited by MEHE, with a total of 165 majors, hence, under pressure many of these institutions were granted licensure given the small geographical area of the country. As a result, online education is not quite needed.

AJ: We don't need online degrees, locally we have 49 universities spread across the Lebanese land, we have 165 programs any program you want from around the world you have it here, so I understand the need in some other countries, but not in Lebanon.

C-Stakeholders

Referred to as the perceptions that MEHE holds regarding some of the key stakeholders in higher education, namely: private institutions, students, public university and community.

Private Institutions: Defined as the perceived opinion of private institutions regarding their benefits and interest in adopting online education at higher education level, distinguished through resistance for online learning and preference for blended learning.

The interviewees confirmed that in many panel discussions that took place private institutions communicated their resistance for online education.

AJ: We've heard it from them many times, they don't want online education

In addition, private universities are excited and want to integrate blended learning approaches in their campuses.

GG: Private universities want blended learning, and we are working with them to see the best combination.

Students: Described as doubts in the capacity of students to undergo online education due to absence of self-regulation skills.

The General Director confirmed that the culture in Lebanon isn't in line with the required interpersonal skills expected from students. Among the most common is clear lack of commitment and self-regulation skills, where students can't claim responsibility and take charge of their own learning. They prefer classical instruction under strict guidance of an instructor as it is easier to cope. Hence, if adopted many students will be at disadvantage, and accordingly, a culture that is consistent with online skills expectations from students should be built and forged prior to any implementation, which is hard to achieve.

The culture of commitment doesn't exist among Lebanese students. They have to start showing commitment, this is a culture, time is a culture, time is useless and meaningless for them. It is the Lebanese way, this is a social concept, not easy to be changed.

Community: Defined as general resistance from the community, due to unfamiliarity with the concept of online education among citizens and high schools.

The General Director confirmed the lack of acceptance of online education among the community, and students in general.

AJ: We have to build among our students a culture cohesive to online education, and we have to convince the general community with usefulness and efficiency, then we build the forces gradually.

The interviewees expressed that any attempt to adopt and implement distance learning, should be incorporated in high school first, where work is shifted towards instilling in students the necessary skills they should possess to achieve success, such as taking charge of their own learning, managing their time well, etc. The aim would be directed towards building an embrative culture to online learning, through bringing about the perceived usefulness and efficiency.

GG: We start from high schools where we incorporate brief areas of online learning, the basic features, we identify what are the responsibilities of the students, how to organize their time and their studies, their attendance, etc.

Public University: defined as the readiness of public university for online education, demonstrated through technology infrastructure and faculty development.

The interviewees expressed the shortage of funding to integrate advanced e-learning software to increase e-learning management capacity.

GG: The state university lack e-learning capacity in terms of technology

In addition, the General Director revealed that many the necessary faculty development programs for online education doesn't exist yet and needs time until it sees light.

AJ: We need to train faculty on teaching online, and right now the focus is on training them on simpler skills in pedagogy, we are not there yet.

Prospects:

The assigned theme under key theme Prospects was MEHE, with one sub-theme Online Models, 2 components and four codes, Table 4.48.

Key Theme	Theme	Sub-Theme	Sub-Theme Component	Code
Prospects	MEHE	Online Models	Instructional Designers	Blended Learning
				Online Diploma
			Approved Models	Undergraduate Studies
				Post-Graduate Studies

Table 4.48: MEHE Prospects Components

Online Models:

Defined as an achievement for the MEHE approving online models that were associated to the presence of instructional designers and approved models.

Instructional Designers: The presence of instructional designer appeared to be a significant contributor in approving blended learning modes and online diplomas for universities.

The General director revealed that any approval to blended program should be steered by instructional designers, and the university should show ability to meet the learning outcomes.

AJ: It is a delicate process, the university should have instructional designers to assist faculty in designing and running courses and has to verify that they can meet learning outcomes.

The interviewees confirmed throughout the interview that the presence of instructional designers is also a key factor in granting approvals for blended programs and online diplomas at the level of postgraduate.

GG: We should see professional handling of online diplomas, where instructional designers would be assisting.

The interviewee confirmed that the MEHE is not totally against online education, for instance it has already been approved at the level of continuing education and post graduate level. Continuing education is not of an interest in this research study, hence, the Pro Green Diploma program was the focus, and a separate chapter is reserved to discuss in details the implementations and satisfaction of learners. The Diploma program is regarded as a major achievement for the ministry and the housing university, the American University in Beirut. It is the first accredited and successful model of online education in Lebanon where the General Director is keen on following and monitoring closely, after it passed through long accreditation process to verify compliance and quality. And upon asking why the credit bearing of the degree can't be transferred to a post graduate program, the Ministry appeared not to be in opposition, rather it is the nature of the program that started as a diploma, rather than Master's program. This model is intended to serve as a foundation to build on for the future.

ProGreen is one of the most successful trials for online degrees in Lebanon, yet it is part of continuing education. The concerned universities showed that they have the proper infrastructure and tools to develop curricula, follow up on students, and audit.

They aimed for 18 credits certificates, but it has the potential to be expanded into a micro-masters.

Approved Models: The approved blended models for undergraduate studies and post-graduate studies is considered to be an achievement for the ministry towards adopting and implementing e-learning.

The General Director revealed ministry support for integration of technology in the form of blended learning approach, however at the level of theoretical courses. Not in any case online delivery could be incorporated in course offering of experimental nature, where laboratories are required. Second, special approval from the ministry should be obtained prior to any implementation. The MEHE will verify the relevance of the adopted technology and pedagogy infrastructure along with the presence of sufficient online resources to grant approvals.

AJ: Blended learning with 50% online delivery is allowed online under 2 conditions: Well prepared online system and platform, that ensures quality and fulfillment of all learning outcomes and the presence of professional instructional designers and pedagogy team.

AJ: But our standards and conditions are too strict, universities should have experts inhouse that would teach the university how to develop course content, these are instructional designers, courseware, pedagogical people. For instance, in online education if you post a video more than 7 minutes, you lose the student.

The interviewees as well confirmed post-graduate level 70% online is approved. In the case of PhD programs, online delivery wouldn't be easily granted to medicine and engineering stream, as laboratories are not easily replaced online and virtually. The major concentration in doctoral program should be in having proper conduct that governs a good monitoring system of the student progress and attendance of seminars, as well as a stipulation that assigns the academic role of the university and student during period of studies.

In PhD, only engineering and medical students would need laboratories and proper attendance, otherwise, if there is an open resource library let him work alone.

The most important thing we continuously stress on, is continuous follow up and monitoring of the student, proper conduct, what is the engagement of the university, what is the engagement of the student, the supervisor, and that student is attending seminars. Let students go out and research, different human contacts, even short time, you see their research methods, their ways, their thinking strategies that will develop your ways and strategies. Not to stay constrained and limited.

4.5.2 Discussion of Findings

MEHE stance is important to the current status of online education in Lebanon as they present the main legislative power that would either accredit or ban online education.

The below part will discuss the findings derived from earlier analysis on the MEHE findings in the light of different models of education departments from neighboring countries, and local and internal literature.

1- Perceptions and Provisions

It was clearly communicated that until further notice, the Ministry is not and will not accredit any online program that is at the level of graduate or undergraduate level, presenting a major barrier to any possible adoption of implementation. Approved blended models for undergraduate and graduate programs are 50:50 percent and 70:30 percent respectively of web-instruction to classroom teaching. The approval of the Tempus project carried out by two leading American universities in Lebanon, ProGreen Diploma as the first online postgraduate education program is an achievement at the level of MEHE and presented as a learning experience to build on. These findings are considered as prospects and are well supported by El Amine (2016) in one of the leading newspaper in Lebanon during his interview with senior executives from the Ministry and Higher Education in Lebanon. On the other hand, expressed doubts in the self-regulatory skills among Lebanese students confirm earlier quantitative results in the current research understudy that showed that students lack the commitment and are easily distracted given online and house distractions, which is in parallel with international results from Smith (2010) and Bawa (2016) indicating

that retention rates are problematic among online courses. Despite the rapid rise in demand, evolution is equally encountered with low attrition rates reaching 80% at certain times.

2- Traditional Systems Govern the Policies and Procedures Of MEHE

It could be argued that unlike neighboring countries in the Gulf where online education is already accepted, adopted and implemented, primitive systems govern the department of education in Lebanon, which is inadequate with the advancement taking place in the theories of education, policy and technology. For instance, in UAE and KSA, the strategic vision, mission and objectives are clearly stated on their official website, and the initiatives, progress and evolution taking place at the level of nation are well guided by the strategic objectives. Which made HH Shaikh Humaid Bin Rashid Al Nuaimi say “the education sector in the UAE has made quantum leaps in the right direction” (Khaleej Times 2012). UAE proved to be successful education model as a higher education hub, attracting many of the leading international universities to be opening branches in the country such, London Business School, Manchester University, Herriott Watt, etc. (Wilkins 2010). Such systems are compatible with the field of online education that requires strong capital and advancing in systems and technologies, to an extent that in the next five years online schools in UAE will see light, after schools in KSA have already turned online (Zaman 2018). Ministries of education in these countries have already established a solid national agency for quality assurance and standards, such as CAA in UAE and the National Commission for Academic Accreditation and Assessment in KSA. CAA was established in 2000 and is a vibrant member of the Arab Network for Quality Assurance in Higher Education (ANQAHE) (CAA 2011). And in turn, standards for accrediting and licensure of e-learning followed after

establishing The National Center for e-learning and Distance Learning in UAE and e-learning Standards for Licensure and Accreditation in UAE in 2007. Fear from diploma mills might partially coincide with the Bahraini experience, where degrees from external universities offering online degrees were banned from national equivalency, because of the poor educational outcomes, where cheating is widespread in some of the testing centers (Alzeny 2015).

The General Director confirms that the technical and pedagogical expertise are available in Lebanon, with high qualifications and capacities to undergo such a big revolutionary stage in Lebanon. Therefore, it could be argued that the Ministry of Education has all the qualified personnel and human resources, which presents as a major prospect, however on the other side it lacks foundational infrastructure in terms of organizational structure, policies, regulation and control to revolutionize the current education models in Lebanon. Such findings concur with local literature, such as Haidar (2010), Sahyoun (2004) who argue that improper quality assurance governs HE in Lebanon, posing a major issue leading to static state since a very long time.

3- Lack of Familiarity with The Fundamental Concept of Online Education

The lack of familiarity with online education was demonstrated through the social presence of the students in online education and possible alternative to online assessment such as official testing centers, lies in parallel with Abu Chedid and Eid (2004) that poor strategies in widening access to technologies override the ministry resolutions, in addition to lack of decisive actions among highest decision-making bodies to implement online education. The results also confirm earlier findings from (2004) that adoption of e-learning requires a

phenomenal change in pedagogy and content of teaching, in which academic decision makers can't as well accommodate due to lack of strategies and plans in transforming current traditional systems to modern and advanced. As articulated by El Amine (2016), 50 – 50 online learning versus classical face-to-face instruction is the only approved model.

Among the most important findings of this section is acknowledging the activity of MEHE in experimenting, testing and piloting e-learning given their moderate capacity, and aiming to utilize only national expertise in developing e-learning framework, however efforts are insufficient and more empirical data from surveys, cross national questionnaires is required to verify many of the aforementioned factors.

4.5.3 Study 4 Model

Therefore, the prospects and barriers could be summarized in the below **Study 4 Model 2**, Table 4.49:

	Prospects	Barriers
MEHE	Approved blended learning models	Doubts in the general acceptance of OE among community
	Presence of instructional designers facilitates blended learning approvals	Doubts in Self-Regulatory Skills Among Students
	ProGreen Diploma as the first successful online model	Lack of national agency for quality assurance and standards
		Lack of a regulatory framework for online learning
		Corruption and Sectarian intervention
		Absence of any clear strategic vision and planning in the MEHE
		Insufficient empowerment
		Faculty professional development
		Abundance of higher education institutions
Technology	E-Learning management capacity in private sector	Technology infrastructure in public university

Services		Doubts in online assessment
		Doubts in socialization

Table 4.49: Study 4 Model

4.5.4 Summary

The comparison across dataset from Study 4, Study 3, Study 2 and Study 1 revealed a number of commonalities and uniqueness particular to each case. The commonalities between the students and faculty were very important as they are the end-users, and their perception is of outmost importance to ensure success of any implementation initiative. On the other hand, the common grounds between the MEHE and senior executives is also a significant contributor to the understanding of the current status of online education as they present the decision makers and any implementation should be granted approval from their direction first.

Venn diagrams were used to present commonalities and uniqueness of findings between Study 1, Study 2, Study 3 and Study 4, presented in Figure 4.20. Comparing the first two studies showed readiness and acceptance for online education, perceived usefulness in terms of increased efficiency of learning, access to education, personal development and career advancements. In addition, they shared results on barriers, where both groups showed reluctance to adopt online education at undergraduate levels, constraints on program applicability, resistance to change, doubts in regulation skills of learners and affected academic rigor. Academic rigor is expected to be less than face-to-face. The main concern of faculty is the job relevance, how would teaching online affect their job positively, as findings showed that the motive is self-intrinsic towards enhancing personal teaching skills and carrying out pedagogy reform at the level of higher education. In that sense, online

education is time consuming and increased faculty workload. Whereas, for students, the concern was the market acceptance, the increased workload and the trust in their dedication and self-regulation skills. Institutional finding confirmed many of these concerns especially the discipline of the students, where the MEHE related to the pervasive culture in Lebanon ‘spoon-feeding’ students and bad ‘time-management’. Accordingly, commonalities among the four stakeholders lie in the perception of doubt in student self-regulation presented in lack of commitment, reluctance to implement online education at any undergraduate levels, rather start with graduate studies and by blended approach for undergraduates, and the feasibility of implementation in classes that have laboratories, clinical practice and designs. MEHE fear the influence of corruption if online learning is accredited on promoting diploma mills and low quality of education standards, that given ministry capacity, such as absence of regulatory framework and national quality assurance, wouldn’t be able to control it. Prospects lie in the success of the ProGreen Diploma initiative, first from technical and operational perspective, second from the MEHE standpoint a sit would serve a foundational reference for further initiatives to build on. The current blended model is also prospect that presents as clear guidelines for institutions to align their expectations.

A final study model on the current status of online education along with the number of factors that proved to be affecting it will be presented in the next section, along with dominating trends and patterns model on prospects and barriers, a set of strategies for overcoming barriers and strategical plan for implementation. The strategies would include dynamics of change and recommendations at different levels, namely: institutional, pedagogical, technological and reform.

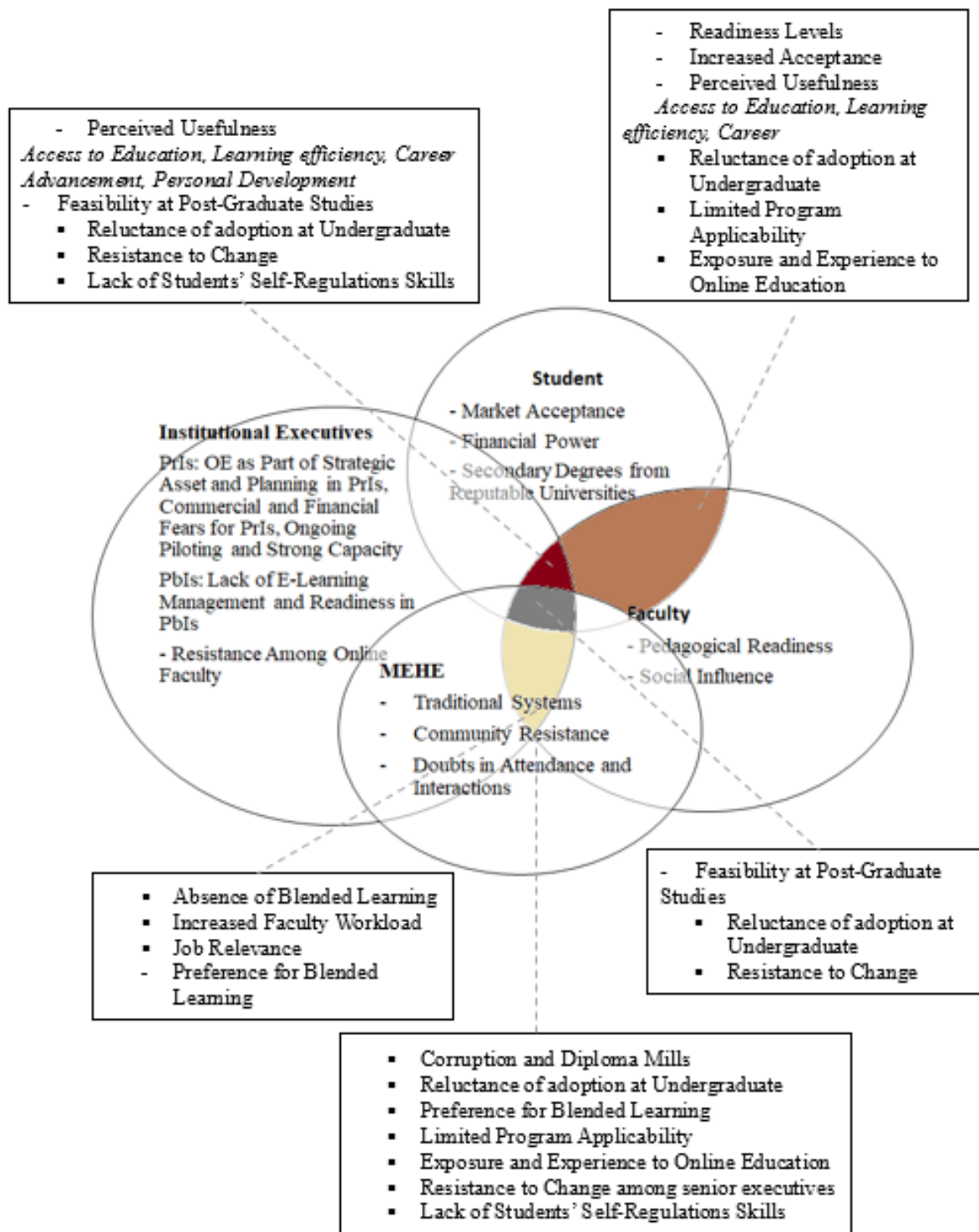


Figure 4.20: Graphical representation of Complete Dataset

4.6 Key Prospects and Barriers Findings

Each group of stakeholders have contributed to our understanding on readiness and acceptance of online education, and the rationale behind their attitude expressed in advantages and disadvantages of online education. This part aims to identify the key findings on prospects and barriers, leading to developing Dominating Trends and Patterns model, then, offer a proposal on strategies for overcoming obstacles to adoption of online learning, presented in the form of dynamics of change, solutions to barriers, and plan for implementation.

Looking at Aparicio et al. (2016) e-learning systems framework, Figure 4.21, adoption of online learning systems is a function of three pillars: People (as e-learning systems stakeholders), Technologies (as e-learning technologies) and Services (as e-learning pedagogical activities).

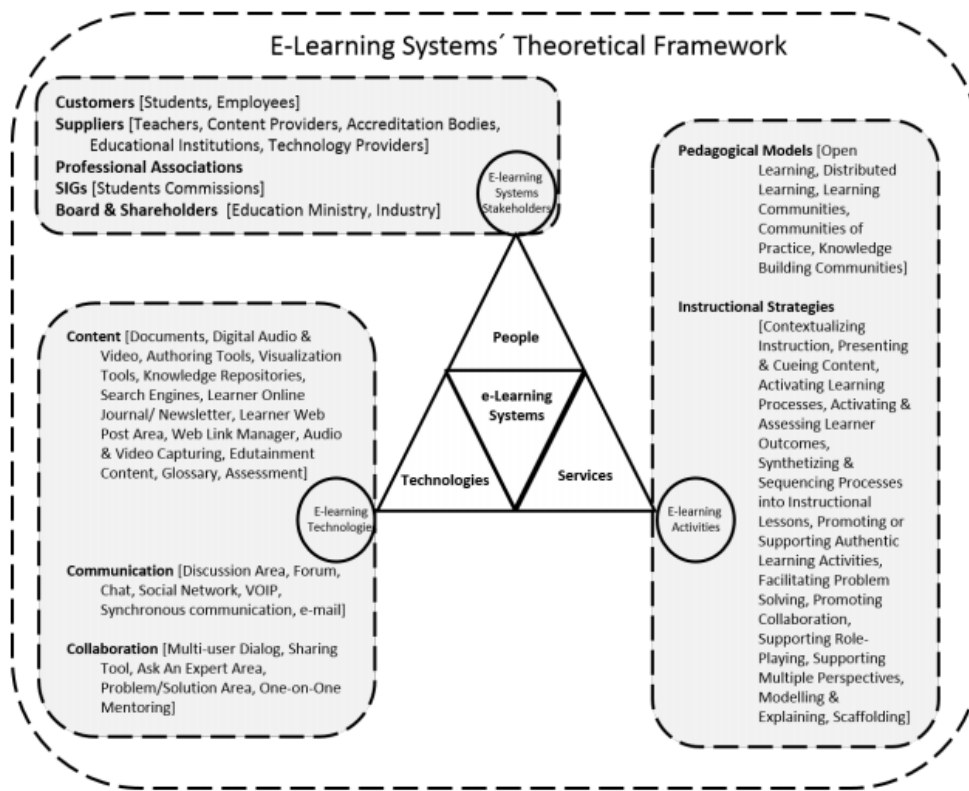


Figure 4.21: Adopted e-learning framework (Aparicio et al. 2016)

In line with the above framework, findings from Studies 1, 2, 3 and 4 were integrated to formulate one consolidated model called Stakeholder Analysis Model, on the prospects and barriers. The model was then triangulated with technologies and services, in order to obtain a comprehensive picture on the current status of online education in Lebanon, Figure 4.22. Findings from faculty pedagogical readiness data served the Technologies and Services purposes.

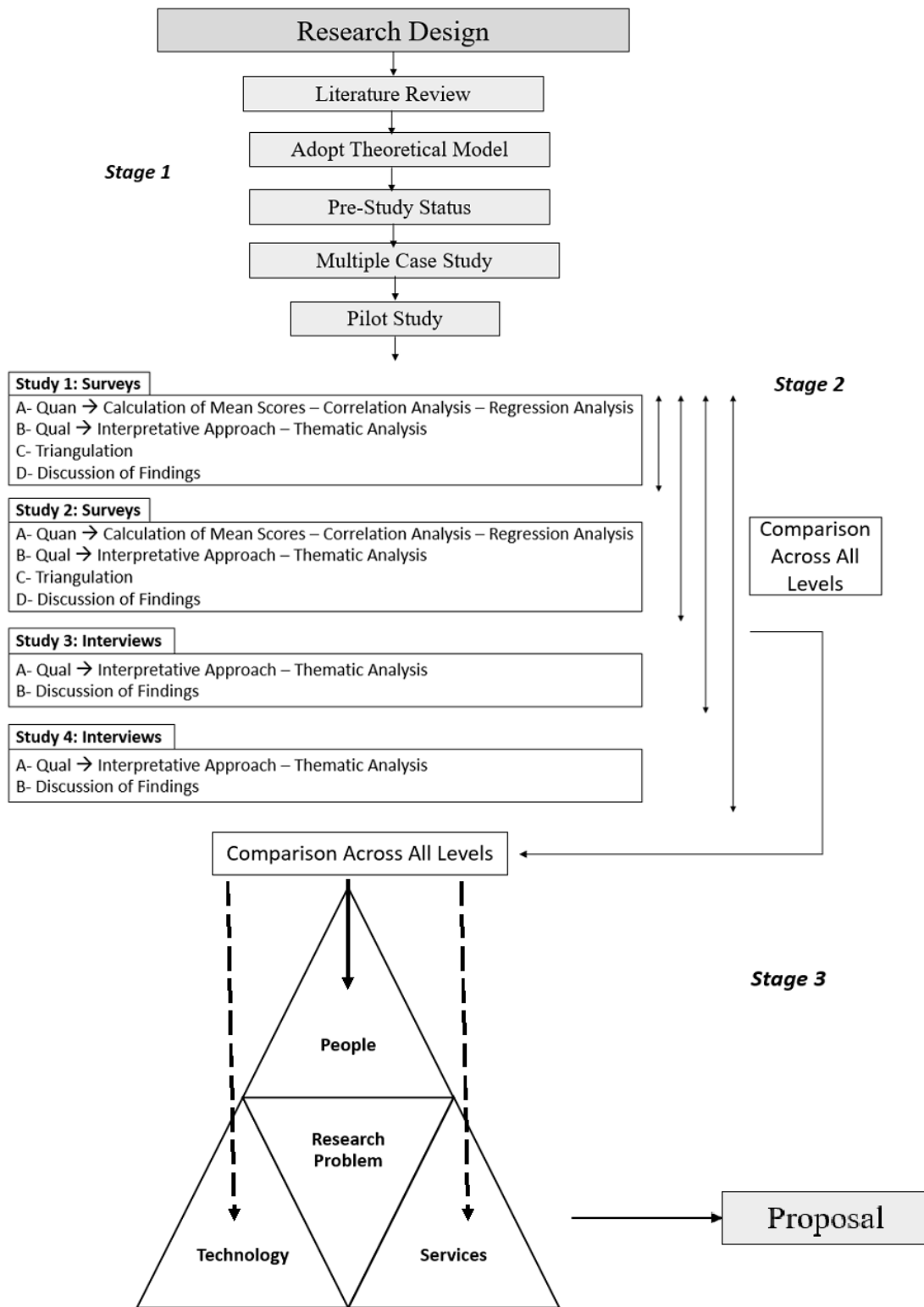


Figure 4.22: Research Design

4.6.1 Dominating Trends and Patterns Model

Integrating the above findings lead to the development of **Dominating Trends and Patterns**, on key prospects and barriers emerged from different modes of data analysis, Table 4.50.

	Key Prospects	Key Barriers
Students	Adequate readiness levels in technical skills, self-directed learning, and motivation among students to engage in online learning	Lack of self-regulatory skills among students
	Increased acceptance to pursue online studies, yet the demand is not high	Acceptance is limited to graduate studies offered by reputable universities
		Lack of external funding sources versus pricey technology
		Lack of knowledge and experience among student and faculty on the functionality of e-learning technologies
		Poor Quality of Internet Connection and Electric Power
Faculty	Adequate readiness levels of faculty in technical skills, time management and attitude to teach online	Absence of blended learning
	Increased acceptance among faculty to teach online	Perceived lack of academic rigor in online education compared to face-to-face
	Overriding practices in private sector compatible with online pedagogies	
	Perception that online teaching can serve as a catalyst for higher education pedagogy reform	
Seniors	Increased revenues and recognition	Fear on student enrollment and retention
	Strong e-learning capacity among private universities	Lack of Institutional E-Readiness in Public University
	Blended learning and e-learning as part of strategical planning	General absence of e-learning practices
		General absence of blended learning

		Resistance among online instructors and other key stakeholders for full fledged online programs
MEHE	ProGreen Diploma as the first post graduate successful online model	Doubts in the general acceptance of OE among community
	Any OE Policy will be a Lebanese Product	Scarcity of empirical data
		Lack of national agency for quality assurance and standards
		Lack of a regulatory framework for online learning
		Insufficient empowerment
		Absence of any clear strategic vision and planning in the MEHE
		Lack of familiarity with the fundamental concept of online education
All	Consensus that online education can better meet students' needs and widens access to education	Common concerns on absence of social interactions, lack of applicability and market acceptance of online education
	Lack of feasibility of online education in undergraduate studies	Resistance to change among faculty and students to full fledged online programs
	Wide agreement on implementation in graduate studies	Doubts in Self-Regulatory Skills Among Students)
ProGreen Diploma	Diploma generated exceptional revenues	Requires extensive efforts to implement
		Resistance among faculty for full fledged online programs

Table 4.50: Dominating Trends and Patterns Model

4.6.2 Final Study Model

This study explored the current status of online education in Lebanon from different angles, mainly from four different groups of stakeholders' perceptions, in an attempt to better understand the prospects and barriers in adoption and implementation of online education.

It started with an assumption that traditional systems of policies and processes govern the work of MEHE, that is incompatible with the advances in the field of online education, hence depriving the nation from the opportunity to harness the globularly significant gains. As analysis was progressing and themes and factors were evolving through thematic analysis, the picture was getting clearer on the stance of each group. Perceptions offered by students and faculty were reasonable and were slightly surprising in a positive sense, such as increased acceptance and readiness among student and faculty in spite of a number of demographical variables. However, the position offered by the senior executives who appeared to be among the dominating academic real decision makers in Lebanon, practicing some control over the MEHE itself sometimes, confirmed through several interviewees, indicate that the more senior the interviewee was the more resistant to the concept of online education, while the less senior the more positive, verifying the feasibility of implementation operationally. The complexity lies at the strategical level, where such stances were further confirmed by the MEHE. Private institutions fear that online education will make them ‘run out of business’, where student enrollment is effected, despite the many benefits they have reported in online modes of delivery. At this stage, the status of the public university started to emerge, which was further completed with the MEHE interviews. Therefore, a model was constructed to show the different associations among different political, commercial and pedagogical factors. The ministry point of view was chosen to be a focal point as it encompasses many key findings, and the current status of online education could be described as follows, Figure 4.23:

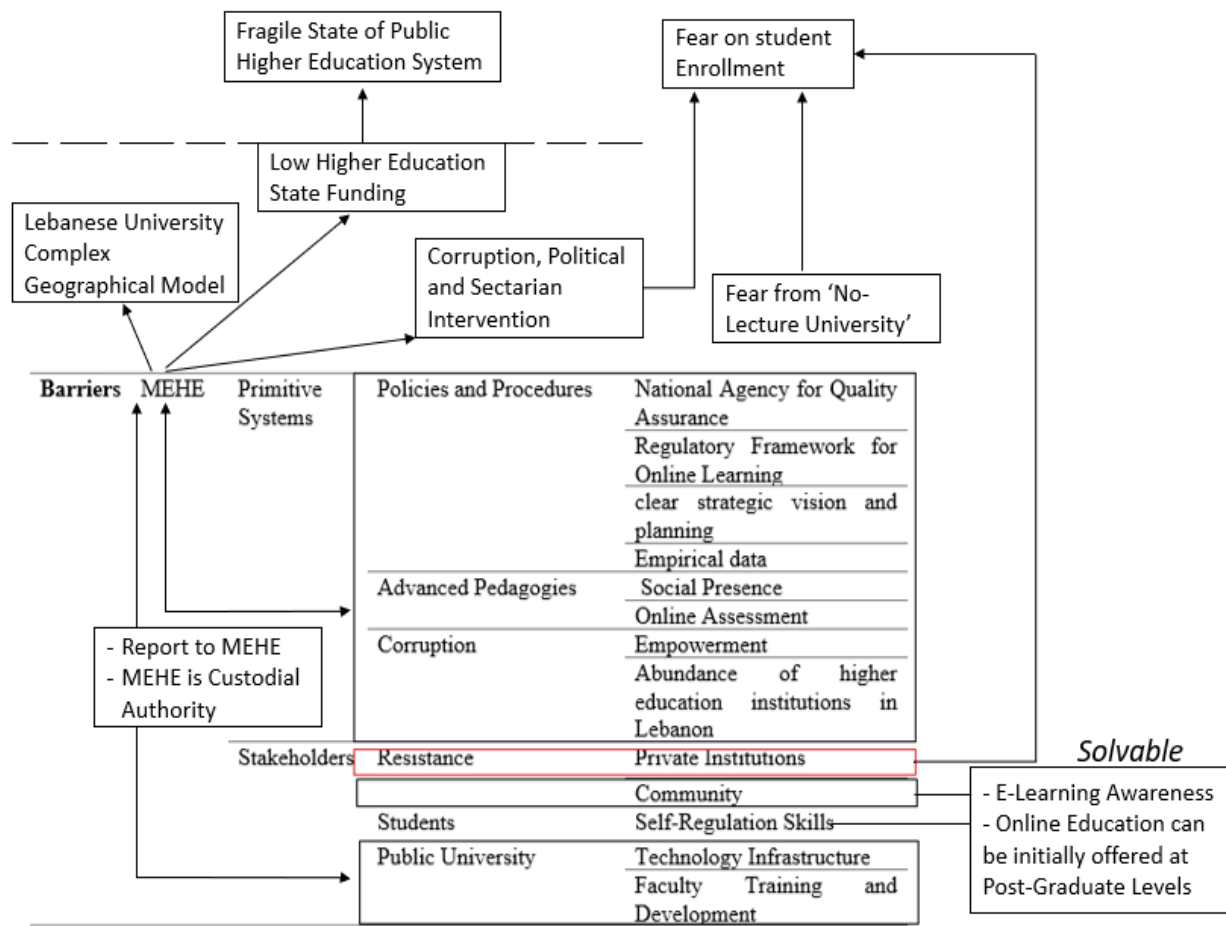


Figure 4.23: Final Study Model

Ministry perception led to identifying 5 major factors affecting adoption of online learning, namely: the primitive systems governing MEHE, the resistance from private institutions, lack of acceptance from the community, student personal traits as to lacking self-regulation skills and the (relatively) weakened state of the public university. This study proposes that three main barriers mainly impede development in online education file, mainly: private institutions, MEHE, and public university. The MEHE and public university both report to a government personnel, who is the Minister of Education and considered as custodian authority. At this stage both governmental entities, MEHE and public university, are affected

by three major pressures, first by the low higher education state funding, that is enough to cover only its monthly operational cost. The \$160 million allocated government budget covers day-to-day operational expenses and costs. Funds are not dedicated to development, such as enhancing technology infrastructure, training faculty, hiring expertise in instruction design to framework the application of blended learning models into the university system. Any phases of development whether in structure, pedagogy, curriculum or advancements is a result of donations either from the European Union, francophone countries or other funding agencies as World Bank, etc.

Therefore, reform in the infrastructure of MEHE and public university is not a viable option now and state funding to be held accountable on that. At the same time, a different pressure emerges from the complex model of the public university, where their 45 different branches are geographically dispersed and spread across the nation, commanded by one person who is the President of the state university with more than 75,000 students enrolled, 40% of total student body in Lebanon. The state funding is not enough to cover the 45 branches, and the Ministry capacity to control quality of education in these branches are far beyond their limits. This geographical scattering had weakened the public higher education system in Lebanon, in which for a decision to be taken upon any amendment or decree would require signatures from more than 35 persons, dispersed around different geographical areas in Lebanon. Thus, slowing down the process of decision making and action, leaving behind many approved ministerial decisions unattended. One communicated example is the strategical vision of the ministry that would incorporate elements of technology issued in 2010 and by 2015 should be effective, and to-date hasn't been implemented. Such a state also explains the absence of

any form of regulatory framework for standards and licensure, and national federal quality assurance framework, that were expressed in the interviews. The current stagnated state couldn't be altered by dividing the public university into several separate universities or colleges in an attempt to diminish the scattering of branches, because it would only reinforce the sectarian divide in Lebanon, where each university or college becomes a base for individual sects or religions controlling these institutions, causing more decay in the social system that is already fragile.

A third pressuring factor on the MEHE and public university is the element of corruption demonstrated through fierce political and sectarian intervention in decision making and processes. A verifying communicated example was stated if the MEHE announces the need for 800 new faculty who are of PhD holders, automatically, this should imply 400 seats for Muslims and another 400 for Christians. If the sect or religion can't satisfy the quota, then random hiring despite qualifications take place within these sectarian groups and sending the least qualified to branches outside the big cities. This factor is worrisome for the private institutions because of the fear of diploma mills once the MEHE approves online education, the situation would be out of Ministry control and universities with minimal standards and quality requirements would offer 'easy' degrees and diplomas. The assumption grows that the combination of this factor in addition to the fear of private universities in becoming 'no-lecture' institutions, would result in private universities losing their students and running out of business. Therefore, most likely reputable universities with 100 years of legacy wouldn't easily give in to the emergent situation and adopt online education.

This study argues that the two major drivers for barriers in a decision for approving online education is the fragile state of public higher education system and fear on student enrollment. The issues related to students lacking self-regulating skills and lack of acceptance among the community are solvable compared to the intensity and complexity of the other factors affecting online education.

Given the aforementioned and despite complexities, the researcher argues that the adoption of online education systems in Lebanon is still a viable option, and has already started with a leading American university, by addressing the proper market and establishing an online campus that is not to be shared with the physical campus. These universities are aware of the local and global higher education challenges such as recruitment, job opportunities for fresh graduates, financing power, and the desire to expand given current facilities and resources. Overcoming such challenges will give the private institutions the competitive edge to thrive in the changing markets of higher education and remain resilient. Strategies for implementation will be further demonstrated in the next section. The whole process of implementation is jeopardized to failing before being conceived has the current status show lack of readiness and acceptance among students and faculty for online education, who are practically the end-users. This empirical study showed adequate e-readiness level and increased acceptance from both groups, hence reinforcing any strong implementation plan. Yet, the main concerns for faculty is the job relevance of online education, and the motive to teach online is due to intrinsic factors related to improving technological and pedagogical teaching skills, at the same time carrying out pedagogy reforms at the level of higher education. In the case of absence of such factors, online education would present as a drift

of faculty attention from duties that are more significant to his/her job, such as research, administrative duties and promotions. Accordingly, decisions on freeing faculty time, monetary incentives, training and promotions should help in encouraging faculty.

On the other side, students' doubts emerged in the market acceptance of online degrees, and the possible disadvantage form over-relying on their skills in studying, showing doubts in commitment. The problem of student self-regulation could be overcome by implementing online education at the level of postgraduates, which is already the least area of resistance and students are mature enough to take charge of their learning. In the meantime, blended learning should be integrated at the levels of undergraduate studies and high schools as well. Awareness campaigns to parents and students on the opportunities brought forth through online education, and their benefits will help in turning hearts.

Key findings that were empirically formulated are presented below.

4.6.3 Key Findings on Readiness, Acceptance and Current Practices

1- Online Education as a Transformation Tool in Higher Education

Online learning is altering how education is resourced, offered and processed, and thus is perceived as having transformative potential power to undergo a reform at the level of higher education to face local and global challenges. At the broader scale, the benefits of these technologies should be available to the Lebanese community, shaped by educators and policy-makers, to widen access to education, enhance teaching and learning, and better

prepare students for the 21st century skills at professional and personal levels. At the level of institutions, academic leaders conveyed that such technologies allow them to meet a wider range of students' individual needs, adapting classical instruction into integrating web-instruction possibilities permit learners to learn anywhere, anytime. In the light of societal and economical possible advantages, it is imperative that Lebanon be part of such advancements, and thus, transform the current weak, fragmented, and primitive system overriding the public education sector including the Ministry of Education and Higher Education to meet international frameworks.

2- Is Online Learning a Strategic Asset?

Online education has showed to be a critical element of private institutions long-term strategies, where rationales for offering online courses would be: (i) respond to space constraints, (ii) serving untraditional populations, (ii) increase international student enrollment, (iv) support student career advancement and producing job-ready graduates and (v) increasing learning outcomes. These reported beliefs are not personal perceptions of academic leaders, rather also translated in their incorporation in private institutions' formal strategic plan. However, on ground the picture is different, e-learning is mostly used to support traditional learning, rather switching modes of instruction, and the implementation of real online learning is still at preliminary testing phases according to the diffusion of innovation model, Figure 4.24. Institutions are carrying out many empirical research such as needs assessment, surveying current students and alumni to examine market and community needs. Testing and experimenting was manifested in piloting chapters,

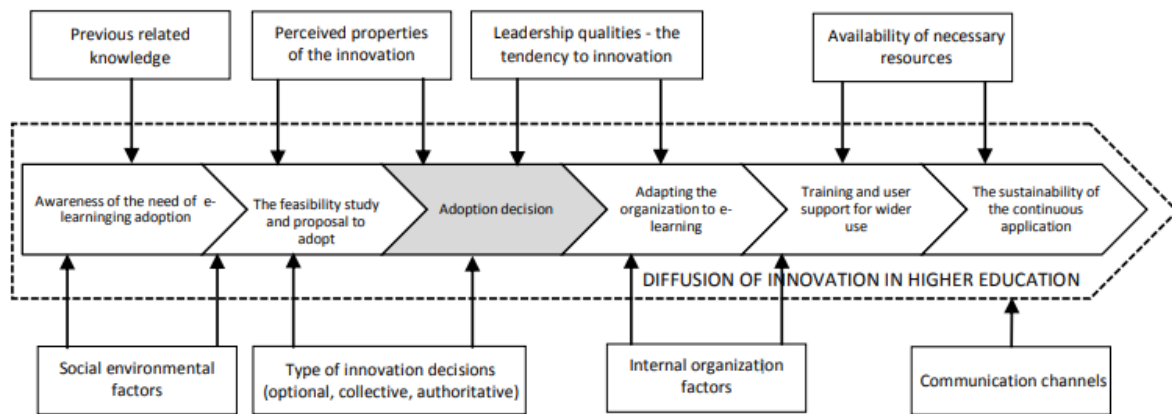


Figure 4.24: Findings on Online learning (Adapted from Buc and Dijvak 2015)

full courses and utilizing OER services in saving soft interactive digital copies of sessions in library for reference of students. These findings are indicator that the digital gap between Lebanon and the West has reduced, as this is the case in many universities in the US as well, “implementation and initiation of online education is still at experimental stages, such as combining the new ideas and advanced educational technologies of online education with existing methods” (Huron Consulting Group 2014, in UB, 2016, p. 1). Nonetheless, efforts have led to the launching of first online post-graduate diploma through partnership of the two leading American universities in Lebanon. Findings are suggestive that decisive actions to implement e-learning is still generally absent, except in one leading university in the field, demonstrated among highest academic decision makers and university councils, where the driving reason might be the trend of online education itself, where “a continuing failure of online education has been the inability to convince” (Allen & Seaman 2016, p. 26) its audience of its worth.

It is important to mention however that growth in local student enrollment wasn’t among the anticipated rationales, countering reports on American universities in North America by

Bacow et al. (2012). Associated fear is that “deliberate academic discourse” (Abu Chedid and Eid 2004, p. 25) might take place if online education is accredited, leaving reputable institutions with ‘no lecture’ status, while in parallel witnessing the rise of new emerging universities that capitalize less on standards and quality, capturing the attention of public. Given that the nation is among the most corrupted in the world with low rule of law, soon the situation will be out of control inducing drop in student recruitment and enrollment in private leading universities. Esteemed universities with more than 100 years of proven records will most likely not give in their classical education to online, otherwise, it would be a very impetuous. These fears appear not to be delimited around the Lebanese context rather internationally as well, where online experimenting trials in Stanford University has provoked outrageous criticism among students, voicing that “they did not come to Stanford to watch their professors perform via computer” (Bacow et al. 2012, p. 9). Another challenge is in forecasting income and revenues with online education, where the student’s behavior is like a ‘ghost’, and it is very difficult on administrators to plan budgeting with ‘ghosts’, as the student is one day in and on another is out. This option becomes viable only if the enrolling university has an extremely large student body, where with online teaching fixed costs are low.

3- Faculty Readiness and Required Support

Faculty proved to be competent and confident in using technology and possess adequate levels of readiness in terms of attitude towards online education and capability to manage time appropriately. Nevertheless, their knowledge on the functionality of e-learning, and the necessary tools and platforms that is incorporated in developing online programs and teach

over the web is very limited. Palloff and Pratt (2011) indicated five phases of development of online instructor, from visitor, to novice, apprentice, insider and master requiring different support needs. Characterized by “those faculty who have never taught online and who may or may not have taken an online course as a student but have consistently posted a syllabus online and have used some communications technologies to supplement their face-to-face teaching” (p. 20), ‘novice’ phase applies to faculty. The growth in e-learning modes of delivery, places load of demands on training and support capacity of educational institutions, to meet the learning needs of faculty. Based on Palloff and Pratt (2011) model any possible intervention at that stage would require support at the level of personal first and content second, given how new faculty are in the field of online education, pedagogy third as their current practices proved to be compatible with online learning and training would have faculty introduced to best practices, and finally technology to master course management system and utilize advanced online communicative tools.

4- Faculty Acceptance of Online Education

Increased acceptance of online education was witnessed in faculty perceptions demonstrated through general willingness to teach online, however, skepticism remains high on the level of academic rigor compared to face-to-face instruction and general quality of education. Assimilating different empirical findings of this study brings about an important result that, Lebanese faculty are qualified and willing to teach online, however their perception of quality of online instruction compared to traditional learning is associated to the to the low public esteem for online learning in Lebanon and Middle East, rather than the worth of online education itself. Faculty appeared to be positive on integrating technology into pedagogy

that are consistent in nature with online instruction, however, they proved to be far from implementing blended-learning approaches, and are mostly traditional. If ever adopted, then blended learning was restricted to the form of completing and submitting assignments remotely, rather than real online model, where the student learn content through asynchronous or synchronous modes of delivery. In that sense, the motive for willingness to teach online classes was majorly the perception that web-instruction can serve as a catalyst to induce transformations in higher education systems and reforms in pedagogies. A surprising finding as well was skepticism among faculty who taught online courses in ProGreen Diploma to apply the same experience into full fledged program, due to issues in confidence, further to ProGreen experience, in their capacity to deliver quality teaching without face-to-face instruction, besides the increased workload. They are still testing multiple strategies in how to better communicate and interact with students, as it was witnessed that lab sessions were highly effective due to synchronous communication.

5- Characteristics of Lebanese Students

Lebanese students possess the adequate level of readiness to engage in online education, where they presented to be self-directed learners, competent and confident in using technology, and motivated for web-instruction. However, they lack the self-regulatory skills, to complete online tasks, which is an important factor to optimize success and reduce chances of drop out. This particular aspect was confirmed by many academic leaders, making implementation of online education at the level of undergraduate studies risky. Increased acceptance of online education and the willingness to take online classes surfaced pertaining to being cost-effective compared to campus learning, expanding academic

choices, important for career advancement and personal development, however the demand wasn't as high as international findings. Students doubted the feasibility of implementation in all fields, and the common problem on poor quality of electric power and slow Internet which hinders completing learning tasks. An important characteristic of the Lebanese context is the absence of external funding sources for students to finance purchase, given the substantial investment in technology online education requires.

6- Blended Learning

Various key stakeholders, including students and faculty, proved to have reservations on the associated quality with pure online courses and degrees, and resorting to this choice would be as a result of external and internal forces, rather than the belief in the worth and added value. Nonetheless, wide consensus deliberately showed in the need and preference for courses that combine multiple forms of teaching methods, online modes of delivery and face-to-face instruction. Such results are in line with Allen and Seaman's (2016, p. 31) report on findings in the US, where chief academic officers "are more favorable about courses that combine elements of online instruction with those of traditional face-to-face teaching". The need for blended learning emerged as part of the institution's strategic planning, recommendation from the Ministry of Education and Higher Education to enhance efficiency and effectiveness of higher education and faculty preference to improve their teaching skills, promote better learning, allowing for student career advancement, prepare students for long-life learning and nurture their interpersonal skills. Hybrid courses present as an ideal solution for academic leaders and faculty, as it appeals to all circumstances, needs and demands such as: institutions would face less challenges in complying with local,

regional and international accreditation bodies, are in line with various national syndicates and charters' standards, and job market requirement, so that a graduating student wouldn't be at any disadvantage. Yet, the implementation is far from aspirations, the public university doesn't have the sufficient capacity to obtain and run basic e-learning systems, such as platforms for e-learning, managing courses and managing students. Technology integration is limited to the use of fundamental tools as audio/video/e-mails, while their students rely on their personal e-mails for communication with their faculty, rather than university accounts. Absence of technology infrastructure is a major challenge towards taking part in the expansion and advancement of education sector, shaping public university to be less competitive in the race for globalization and modernization. On the other hand, private universities have full capacity to integrate blended learning approaches in their classroom instruction, with strong infrastructure and e-learning teams comprised from instructional designers, multimedia specialists, IT administrators and qualified faculty. These teams are capable of producing and authoring content for pure online classes, as the case with ProGreen Diploma, yet findings are suggestive that few faculty are offering hybrid courses. The dominant blended approach model is dropping sessions for the purpose of remote work and submission of tasks, rather than learning online, hence, e-learning technologies are used to support classroom instruction rather than prepare students to learn over the web. To date, the use of such technologies is not mandatory from the institutional top management in Lebanese universities, although in a leading American university offering courses through Moodle has reached as high as 90% and requests for complete integration of LMS such as Moodle and Blackboard in all courses are voiced through students, but some faculty are

reluctant. Therefore, blended learning is at the adoption/early implementation phase, Stage 2 according to Graham et al. (2013) model on the matrix representing stages of in blended learning adoption and implementation framework.

7- Where Does Online Education Fit?

Online education is a good fit in a number of areas in Lebanese education sector, namely: graduate programs particularly streams such as Executive MBA (E-MBA) freeing busy candidates of high profiles from timetables and late classes, programs of theoretical nature such as Arts and Humanities, lectures taking place in big halls with number of students reaching 300 jeopardizing quality of learning and programs attracting international students yet require local education to be granted licensure for practice, such as law and nursing.

8- Open Education Resources

Private institutions showed strong capabilities in their OER, and academic leaders shared the perception of its significance for their campus and fulfilling their strategical goals pertaining to implementation of blended learning, and possible online education. It is playing an important factor in supporting the experimentation and testing phases of implementing online learning.

Stage 3

4.7 Strategies to Consider for the Adoption of Online Education

The below part will offer a proposal for adopting online education that comprises Dynamics

of Change, Offered Solution to Barriers, and Strategy for Implementation. This proposal aims to harness the various opportunities unlocked by legalizing online learning and implementing it, through building on the derived prospects as a foundational stage to offer solutions to impeding challenges and guide efficient implementation strategy. The trustworthiness of this product lies in providing evidence-based information, based on empirical and theoretical findings, to advance integration of online education in Lebanese higher education system.

4.7.1 Dynamics of Change

In this research study, dynamics of change are the derived prospects to adopt online learning, in addition some of the barriers could be turned into opportunities to further support institutional transformations at times of major paradigmatic shifts and global challenges facing higher education, as follows:

- (i) Online education can widen access to education, which is a fundamental right for any citizen.
- (ii) Students are self-directed learners, distinguished by increased acceptance to study online as web-instructions meet their needs, and pursue online degrees at the level of graduate studies and from reputable university.
- (iii) Main end users of online education, i.e. student and faculty, are competent and confident in using technology, have access to personal computers and are motivated to engage in online education.

- (iv) Faculty use technology-enabled pedagogies that are compatible with online instruction, distinguished by increased acceptance to teach online and perceive online teaching as a catalyst for higher education pedagogy reform, and catering for students' individual needs.
- (v) Online education is a strategic asset in private higher education institutions that helps in growth of revenue and facing regional and global higher education challenges, distinguished by strong e-learning capacity, where teams and taskforces are assigned to advance and integrate blended learning, undergoing many recent piloting studies and needs assessment.
- (vi) Ministry of Education and Higher Education has granted approval for ProGreen Diploma as a first online program at the level of higher education, with provisions to convert it to Micro-Masters, as a major achievement in transition to advanced higher education sector. The ministry is closely observing achievements of private institutions to successfully implement blended learning and result in an embrative attitude among institutional leaders to online learning.
- (vii) Despite its operational difficulties, the ProGreen Diploma is very profitable. As a matter of fact it has achieved profit from the first day of launching, indicating a good market for online diploma, although it is typically new.
- (viii) Increased pressure to reduce standards and quality of learning to compensate for decreased enrollments and retention rates.

4.7.2 Solutions to Impeding Barriers

This part will offer solutions to the derived barriers, based on the empirical findings derived from various stakeholders, namely, students, faculty, academic leaders including ProGreen Diploma executives and legislative authorities.

- (i) Awareness campaigns for market and students start in high schools:

Awareness campaigns aim to introduce the public on the benefits of integrating elements of online learning into teaching approaches, with reflected benefits on students, employers and parents. Campaigns should emphasize the scope and quality of education underlying distance learning, requirements for success and capitalize on the knowledge and skills offered during online learning versus market need. Increasing awareness should take place through inviting them to seminar, training workshops and pilot studies to increase the demand.

- (ii) E-learning collaborative partnership model similar to ProGreen Diploma program should see light among different institutions:

University reputation was presented as a significant contributor to the acceptance of online education among students. Given the extensive amount of efforts and resources required to build an online program, e-learning collaborative partnership model similar to ProGreen Diploma is required for better feasibility. Among the most needed would be a reliable e-learning team that comprises faculty specialists, instructional designers, multimedia specialists, IT administrators and developers, auditors and other administrative key

personnel. Findings showed that not all private universities have equal e-learning capacity and experience, hence, partnership is inevitable.

(iii) Making Online Education Cost Effective:

For online education to be appealing and attractive it should be offered at reasonable prices compared to campus learning. In addition, financial support should be extended to students on need base, through allocating special scholarships, and offering computer loans or support buying laptops.

(iv) Faculty Support, Training and Development:

The online classroom is a powerful yet complex ground for teaching and learning, as advanced methodologies of engagement and instructional practices are of significant contributors to effectiveness of teaching. Therefore, “in order to harness the power this creates in education, instructors must be trained not only to use technology but also to shift the ways in which they organize and deliver material” (Palloff and Pratt 2011, p. 30). Barriers surfaced at the level of resistance to change, perception on increased workload, reduced quality of education in online classes and lack of feasibility of implementation in different programs presented as key concerns for faculty, in that sense any support and development plan should take into consideration the aforementioned factors as such:

- Free up some of the faculty time to allow them to undergo extensive training, assign reasonable caps on class size limits that wouldn't exceed 20 students.
- Promote online education as a platform and venue for social presence and interaction, through emphasizing on pedagogies that cultivate sense of learning communities,

where faculty can “enjoy mutual interdependence, build a sense of trust, and have shared goals and values” (Ni 2013, p. 201). Faculty are encouraged to use various instructional technologies and creative ideas should be embraced and acknowledged.

- Academic recognition through monetary rewards, promotions and possible tenure that is widely spread in North America are recommended to be used to encourage faculty and sustain motivation, given the increased efforts required to excel in teaching online.
- Incorporate common educational theories and principles in the development of content, and “integrate online learning into program evaluation and outcome assessment” (Palooff and Pratt 2011, p. 31).

(v) Student Support and Training:

Despite competency and confidence in access and using technology, lack of exposure and experience to e-learning software and the functionality of online education presented as significant barrier, that requires intervention through training workshops and continuous technical support. Online education creates a range of support needs that is different than campus based students, that should facilitate the acquisition of competencies and skills required to avoid drop out, sustain motivation and promote success of the learner. Common concern on e-learning technologies, among faculty and students, is that it might not be the best medium for social interactions and exchanges of thoughts, therefore extensive training should focus on the use of e-learning software fluently, then forms of synchronous and asynchronous online communication tools. Online collaborative tools like wiki, discussion forums, chats may prove to be critical for student success and satisfaction to study

collaboratively rather than independently. It is highly likely that these skills would be effective in the future careers they lead, and hence, should be promoted as life-long skills that helps in developing independent learners. Coherent models of support should be available to students so that equitable access is ensured, pertaining to technical, administrative and personal interpersonal skills.

(vi) Overcoming Fears on “No-Lecture” Institutions and Budgeting Problems:

Concerns on academic discourse and emptying large and reputable universities from their traditional students, in addition to forecasting budgeting and revenues appeared abundantly. This research is suggestive not to mix online and campus students, rather to have traditional campus and online campus, which either may be located on the same geographical area or far apart. For instance, Southern New Hampshire University online campus is five miles away from the original campus (Bacow et al. 2012). Some institutions even recommend that online campus has its own academic and administrative staff, such as admissions, registration, IT and faculty. Such programs independent from campus-based offering, would allow institutions to offer them at more cost-effective prices, compared to face-to-face instruction, which is in line with global efforts to drift away from expensive cost and spending to more affordable means.

(vii) Overcoming Issues with Attendance and Online Exams:

Ministry of Education reluctance on the worth of online education was clearly expressed in doubts in validity of online examination and lack of measures to ensure attendance. These obstacles emerge as part of ambiguity in the definition of online attendance. Regarding

attendance, in online environment the student is continuously present and engaged, attending in different ways, where the notion to student physically present doesn't indicate attendance. If the requirement is to show simple presence, the e-learning software is capable of indicating when did the student attend to the material, how long did he/she stay in each slide, etc. However, according to international norms that wouldn't be demonstration of sufficient attendance, and what is acceptable is completing and submitting a learning task and assessment, document participation in collaboration discussions, tutorials, or computer assisted teaching and posting in discussion of forums or any other authorized groups. On the other hand, online education by nature places less weight on examination compared to other forms of assessment, where students are asked to generate knowledge in best ways. Insurance of identity during online exams could be verified in a number of ways, either through webcams, special software with remote access to control web browsing, etc. However, if campus exam is required, then one solution would be to establish affiliations with universities in certain countries to host enrolling students for the purpose of examinations, serving as exam centers.

(viii) Overcoming Technical Difficulties:

A common problem among faculty and students was the poor Internet quality. At the institutional level, hosting clouds from UK with reasonable price and unlimited storage proved to be useful and serving the purpose in the ProGreen Diploma. However, from the user side Ministry of Communication revealed that new Internet speeds had been rolled out by Ogero in Lebanon, and efforts should be placed in getting access to upgraded plans.

4.7.3 Strategic Plan for Implementation

The implementation will focus on three major areas: (A) Institutional Recommendations, (B) Pedagogical Recommendations, (C) Technological Recommendation and (D) Reform Recommendations.

4.7.3.1 Institutional Recommendations

These are the kind of recommendations that would help in responding to various stakeholder needs' and if carried out can benefit all parties, particularly generating better return on investment for private universities, and help in legalizing online education:

- i- A documented e-learning strategy should be available that would embrace the enabling the role of digital technology to promote meaningful learning and transform modes of instruction. Such digital technologies should be perceived as means “for great efficiency and continuous enhancement and expect boundary breakthroughs and new strategies” (UCC 2012, p. 1).
- ii- Efforts should be directed towards ensuring that the chosen LMS or CMS is promoting technology enabled learning through verifying success in motivating and engaging users, i.e. students, faculty and administrators. Staff and academicians' development programs is the key, through first training key LMS administrators, then encourage faculty intrinsic motivation through presenting the usefulness of the software and benefits on faculty, encourage an atmosphere of innovation and change, and ensure the availability of user-friendly interface.

- iii- Start by offering hybrid courses at undergraduate and graduate levels, where bachelor students completing 30 credits can be enrolled in courses of blended nature. Courses and programs of least resistance should be leading to optimize chances of success.
- iv- Examine the needs of institution for blended learning, to expand their academic program offering from one side and enhancing quality from the other side. For instance, a leading American institution is drafting full blended program in nursing and law to attract international students, and EMBA for busy CEOs. Next, is to examine the needs of faculty for blended learning, what solution to what problems does it offer, and what is the best model for integration, is it turning one session per week online, or two consecutive weeks online versus rest face-to-face, etc. Instructional designers can help in reaching a good combination.
- v- Graduate programs are a good fit for online education offering, with particular emphasis on Arts, Humanities and Social sciences.
- vi- Offering online degrees (or diplomas) by any reputable university, takes long extensive efforts, and as one senior executive mentioned “it might look something small, but the effort is like introducing PhD program. Difficulty lies in meeting local, regional and international registration and accreditation of enrolling universities, that’s almost equivalent to reaccreditation. Hence, from an administrative perspective, serious commitment is required.

- vii- Online courses should be given ample of time not less than 3 - 4 months to prepare, test and pilot, before it is up and running. On average 20 – 30 slides will require 18 hours of extensive work to prepare, then 3 hours for audio recording, then 2 hours for post-production, i.e. publishing and posting. In addition, expectations should be set from the beginning for faculty with due dates, deliverables and consequences if commitment wasn't fulfilled.
- viii- Not all students are digital natives and 'tech-savvy', hence student training and continuous support all through period enrollment is important.
- ix- A reliable auditing system helps in controlling quality, where auditors are assigned to each online course and conduct satisfaction and progress surveys twice in a semester, mid and towards the end.
- x- The personal effort required from a faculty to teach an online course, is by far huge compared to face-to-face instruction. Hence, monetary rewards as extrinsic factors will help, however the faculty should have intrinsic motivational factors to 'buy-in' online courses and diminish resistance and reluctance.

4.7.3.2 Pedagogical Recommendations

These are the recommendations at the level of pedagogy that would help in the adoption of online education, effective implementation, and success of online courses.

- i- The presence of specialized instructional designers in abundance is a must, whereby their main role is faculty development and provide course design support. Training faculty members might seem brief, however, despite how knowledgeable they are, intensive training on teaching methodologies,

formulation of their teaching identity and proper follow up on the students is hard to reach.

- ii- Faculty social presence is very important and is underestimated, otherwise there is a risk of isolation of learner and low completion rates of courses. Online learning students need to continuously feel the presence of faculty.
- iii- Carrying out live sessions, whether for the purpose of synchronized learning or meeting the students in chat rooms and getting to know them better, appears to be effective in strengthening the faculty-learner bond.

4.7.3.3 Technological Recommendations

The presence of strong technological infrastructure is essential, to ensure smooth automated progression between admission, registration and course navigation. Hence, a full reform at the level of public university is required to elevate e-learning capacity, demonstrated through integration of reliable student management software that would automate admission and registration processes, then e-learning software, providing well-equipped computers labs and encouraging/forcing faculty to continuously utilize e-learning software in teaching and learning.

4.7.3.4 Reform Recommendations

In the current capacity, the Ministry of Education and Higher Education is unable to legalize online education, due to political issues such as lack of empowerment in a corrupted country, poor processes, strategies and absence of plans for smooth transition. Any decision on accreditation will result in abrupt change that the ministry can't accommodate.

- i- A full reform at the level of MEHE is required through finalizing and publishing the ministry strategic vision and planning that should include ICT and integration of e-learning platforms, forming an independent national agency for quality assurance and standards and finally developing a regulatory framework for online learning since already programs are being approved such as ProGreen.
- ii- A full reform should take place at the level of public university, through a decisive action to digitalize the students, staff, faculty, systems and processes to facilitate the logistics for successful structural, governance and institutional transitions to more advanced systems.
- iii- An accreditation standard could be added, similar to CAA Standards in UAE (2017), that would require educational institutions to demonstrate that they have developed policies specifying the kind of technical support they provide students and faculty with pertaining to equipment and software. In that sense, all private universities not only leading ones would be motivated to carry out technological transformations in their campus.

4.8 Summary

The design of the current research study was conducted over 3 stages, where Stage 1 assigned a Pre-Study Model, Stage 2 presented the analysis and findings from different stakeholder analysis case studies, namely, Study 1, Study 2, Study 3 and Study 4. Triangulation techniques in Study 1 and Study 2, along with inductive comparison across dataset led to a dominating trends and patterns model on the consolidated prospects and

barriers to adopt online education in Lebanon. The model helped in bringing amount an emerging status of the online learning, that was denoted as Final Study Model. Stage 3 offered a strategic implementation proposal that would stipulate dynamics of change and help in overcoming derived barriers that would impede adoption. The proposal took the form of multifaceted recommendations, that is based on empirical findings and theoretical underpinnings governing this research study. This current chapter presents the core of investigation and findings in the dissertation, as it answers all the research questions assigned in Chapter 6 and assigns major contributions to knowledge.

The following Chapter 5 on Conclusion summarizes key findings pertaining to main and sub-research questions, stage the empirical, valuable and practical contributions this study has to offer, limitations and assigns a conclusive statement.

5 Conclusion

5.1 Summary of the Study

The main aim of this research was to obtain a finer-grained understanding of the primary opportunities and challenges to adopt and accredit online education in Lebanon, then offer a strategic plan for successful implementation of online education. The research was conducted in two big cities in Lebanon, during Fall 2017/2018 semester, where the interest was in five universities that appeared to be advanced in implementing elements of e-learning in their campus according to review of literature, intermediate, and pre-early beginners. The aims and objectives that were outlined in Chapter 1 were covered. The main research question and sub-research questions were accomplished, and the below conclusions were reached:

The first chapter demonstrated the statement of the problem, purpose and objectives, research questions, significance and rationale of the study and structure of the dissertation.

The second chapter presented the working definition of online learning, brief history around the evolution of e-learning, facts and figures on e-learning and higher education sector in Lebanon. It mainly presented the conclusions of extensive critical review of literature on the Social Cognitive Theory and E-learning model as guiding theoretical framework, the study concepts, namely, student readiness, faculty readiness, and perception of stakeholders towards acceptance of online education, then concluded with a pre-study model on reported prospects and barriers in Lebanon towards adoption of online learning.

The third chapter discussed the research methodology covering the philosophical underpinnings, research design, data collection, site and subject selection, survey instrument, piloting study, distribution protocol, interview guides, setting up the interview, methods for quantitative and qualitative data analysis, delimitation, ethical considerations, and trustworthiness.

The forth chapter demonstrated how each of the studies were separately analyzed, in the case of mixed methods, individual models developed from the quantitative and qualitative findings, were triangulated with pre-study model and literature to form a final model specific to each study. In the qualitative cases, qualitative derived models for each individual study were triangulated with pre-study model and literature as well to derive final models per each study. These models allowed to develop stakeholder analysis on the prospects and barriers to adoption of online education pertaining to faculty and student readiness and acceptance of online learning on one side, and senior institutional executives and academic decision makers perspectives on opportunities and threats. The mode was at a later stage merged with pedagogical findings on faculty according to adopted theoretical framework, to develop a final master model, comprising key findings on prospects and Barriers. Solutions are then offered to barriers, and recommendations for strategic implementation of online learning based on empirical and theoretical findings took place.

5.2 Research Questions

The below table confirms answering the proposed research questions by this study:

Main and Sub-Research Question	Answered
- What are the prospects and barriers in the e- readiness level among higher education students in Lebanon and perception towards online learning?	✓
▪ What is the level of e-readiness among students to enroll in online classes?	✓
▪ What are the factors affecting e-readiness of the Lebanese student?	✓
▪ Is there a relationship of statistical significance between student e-readiness and willingness to learn online?	✓
▪ Is there a relationship of statistical significance between student e-readiness variable and its components?	✓
▪ Is there a relationship of statistical significance between student various demographic and <i>Readiness</i> ?	✓
▪ How could the acceptance of online education among Lebanese students be described?	✓
- What is the e- readiness level among faculty members in Lebanon and perception towards online teaching?	✓
▪ What is the level of e-readiness to teach online among faculty?	✓
▪ Is there a relationship of statistical significance between faculty e-readiness and willingness to teach online?	✓
▪ Is there a relationship of statistical significance between faculty e-readiness variable and its components?	✓
▪ Is there a relationship of statistical significance between student various demographic and <i>Readiness</i> ?	✓
▪ How could the faculty acceptance of online education be described?	✓
▪ How compatible are the current adopted pedagogies with online education?	✓
- What is the perception of key higher education institution's senior stakeholder in Lebanon towards adopting online education?	✓
- What is the perception of main legislative academic decision makers in Lebanon towards adopting online education?	✓
What are the prospects and barriers impeding adoption of online learning systems at higher education in Lebanon?	✓

Table 5.1: Addressed Research Questions

5.3 Empirical Contributions

The below Table 5.2 represents the findings of the current research study in comparison with Pre-study Model pertaining to prospects and barriers to online education in the Lebanese context, and broader literature on the Lebanese experience with online education. It aims to present findings from this study as either attesting or refuting literature data. Moreover, some findings appeared for the time in literature, Table 5.3, confirmed through triangulation of different data sources, making them valuable contributions, presented in Table 5.3.

Reported Barriers in Literature		Findings
Technical Difficulties		
Inadequate electricity	El Turk and Cherney (2016)	✓
Frequent technical difficulties such as inconsistent Internet access	El Turk and Cherney (2016)	✓
Poor technology infrastructure	AbdelRaheem (2006)	x
Doubts in Feasibility of implementation	Nasser and Chedid (2010); El Turk and Cherney (2016);	x
Financial Difficulties		
High costs in training and investments	Nasser and AbuChedid (2010)	x
Lack of funding to integrate technology	AbuChedid and Eid (2004); Baroud and Abouchedid (2010); Nasser and AbuChedid (2010); Tarhini et al. (2013)	x
Pricey Internet access	Abdelraheem (2006); AbuChedid and Eid (2004)	✓
Limited access to personal computers and internet connection	AbuChedid and Eid (2004); Mirza and Abdelkareem (2011)	x
Attitudinal and Pedagogical Difficulties		
Increased academic staff workload	El Turk and Cherney (2016)	✓
Resistance to teaching online	El Turk and Cherney (2016); Baroud and Abouchedid (2010); Nasser and Chedid (2010); Tarhini et al. (2013)	x
Reluctance to teaching online courses not owned by faculty	El Turk and Cherney (2016)	-

Negative attitude among academicians on worth of value of online learning	Nasser and Chedid (2010); Mirza and Abdelkareem (2011)	✓
General doubt in the perceived usefulness	Nasser and Chedid (2010)	X
Lack of familiarity with distance education	Nasser and Chedid (2010)	✓
Abrupt shift towards new pedagogical models where faculty are not familiarized with its content, objectives and learning outcomes.	AbuChedid and Eid (2004)	X
Abrupt shift towards new pedagogical models where policymakers are not familiarized with its content, objectives and learning outcomes.	AbuChedid and Eid (2004)	✓
Caution over administering online exams	AbuChedid and Eid (2004)	X
Lack of faculty trust in one another's ability in using advanced technologies in teaching as well as in building up teamwork spirit in the workplace	El Turk and Cherney (2016)	X
Social Barriers		
Literacy	AbuChedid and Eid (2004)	-
Access of education to social issues and immoral cues	Abdelraheem (2006); AbuChedid and Eid (2004)	X
Difficulties at Leadership Levels (Academic and Administrative conditions impeding)		
Poor strategies in widening access to technology in education institutions, hence widening digital gap between Lebanon and rest of the world	AbuChedid and Eid (2004)	✓
Lack of e-learning management capacities	AbuChedid and Eid (2004)	X
The work of AOU was obstructed due to lack of legislative policies on accreditation and recognition	AbuChedid and Eid (2004)	X
Policies discouraged Lebanese students from enrolling in distance education programs offered by universities in Europe, Australia and North America.	AbuChedid and Eid (2004)	✓
At its best, introduction of e-learning in educational institutions was limited to the mere use of Blackboard and Moodle	AbuChedid and Eid (2004)	✓
Lack of Arabic content and applications, for non-bilinguals	AbuChedid and Eid (2004); Mirza and Abdelkareem (2011)	-

Implementation of e-learning programmes in educational institutions may result in abrupt change in content and pedagogy of teaching, with educational decision-makers can't accommodate due to the near absence of plans for smooth transition from traditional to modern.	Abu Chedid and Eid (2004)	x
Fear from deliberate academic discourse that might take place, and universities will become 'no lecture' institutions.	AbuChedid and Eid (2004)	✓
Lack of decisive actions to implement e-learning among the highest academic decision-making bodies such as university councils.	AbuChedid and Eid (2004)	✓
Lack of decision due to the lack of familiarity and techniques methods among deans and chairpersons/ managing and administrating online registration	AbuChedid and Eid (2004)	x
Lack of regularity policies that facilitate the use of e-learning and training in education institutions.	AbuChedid and Eid (2004); El Turk and Cherney (2016)	x
Lack of standards and indicators for quality assurance	El Amine (2016)	✓
Support for blended learning rather than online education.	El Amine 2016	✓
Blended learning can't exceed 50%	El Amine 2016	✓

Prospects in Literature		
Teachers are neutral in their opinion towards online education	Nasser and Abu Chedid (2010)	x
Teachers willingness to invest in efforts in distance program and support it	Nasser and Abu Chedid (2010)	✓
Teachers belief that distance education program would benefit them	Nasser and Abu Chedid (2010); Haidar (2014)	✓
There is uncertainty regarding implementation of distance learning because of overt unfamiliarity with distance programs	Nasser and Abu Chedid (2010)	x

Online education is capable of: increasing revenues, increasing enrollments, expanding educational offerings to non-traditional populations, potentially improving retention, alleviating space constraints, solving commuting distance and time issues, reducing overall costs, and improving student learning outcomes.	El Turk and Cherney (2016); Haidar (2014)	✓
Online education is well accepted among students in Lebanon despite mentioned problems	Tarhini et al. (20103)	✓
Perceived usefulness (PU), perceived ease of use (PEU), social norms (SN) and Quality of Work life (QWL) to be significant determinants of students' behavioral intention (BI)	Tarhini et al. (2013)	✓
Faculty favorable attitudes towards engaging in full fledge online degree and education	Abouchedid and Eid (2004)	✓
Online education should be a mechanism for enabling Arabs to gain better access to higher education in a region that suffers from poverty, wars, illiteracy and economic dissolution.	Abouchedid and Eid (2004)	✓
Faculty recognition of e-learning as an effective tool for meeting a globally challenging and exponentially growth information economy	Abouchedid and Eid (2004); Haidar (2014)	✓
42 private government institutions, the majority of conclusions suggested that Lebanon required an online learning institution	Sahyoun (2004)	x

Table 5.2: Findings on Opportunities versus Literature

5.4 Valuable Contributions

Valuable contributions are considered as findings derived empirically through the current research study, supported by literature, and appears for the first time in the Lebanese context.

Two kinds of valuable contributions are presented, first, valuable findings, second, extended readiness and acceptance models for students and faculty, third, a final study model on the current status of online education in Lebanon.

This study reached important valuable contributions pertaining to feasibility and applicability of implementation, perceived usefulness factors, financing difficulties and pedagogy readiness of faculty.

Valuable Contributions
Financing power of students vs. pricey technology is a barrier at level of readiness, willingness and acceptance of online education.
Feasibility of implementation of online learning in post-graduate studies those that are not of laboratory and clinical nature and offered by reputable universities with proven records of standards.
Online education presents as increased academic choices in programs and universities abroad.
There is reluctance among students to pursue online degrees at the level of undergraduate studies, a prevailing perception of limited fields of application and lack of market acceptance for online education, which would position e-learners at disadvantage compared to classical degrees.
Faculty members pertain to instructional approaches that emphasizing authentic learning, where the student is encouraged to demonstrate knowledge through real-life context and situations, problem solving where students get “stuck” and “unstuck”, teaching them to grapple and unfold solutions, enroll in collaborative activities to teach negotiation and reflection, and as expected modeling and classical explaining.
Online education is perceived as a catalyst for higher education pedagogy reform
Faculty showed lack of exposure and experience in using collaborative online tools, which maybe an indicator to the absence of blended learning in higher education classrooms.

Table 5.3: Empirical Contributions

Another valuable contribution was in expanding student and faculty readiness models to incorporate acceptance, and willingness. These models, Figure 5.1 and Figure 5.2, will be further tested in different research papers.

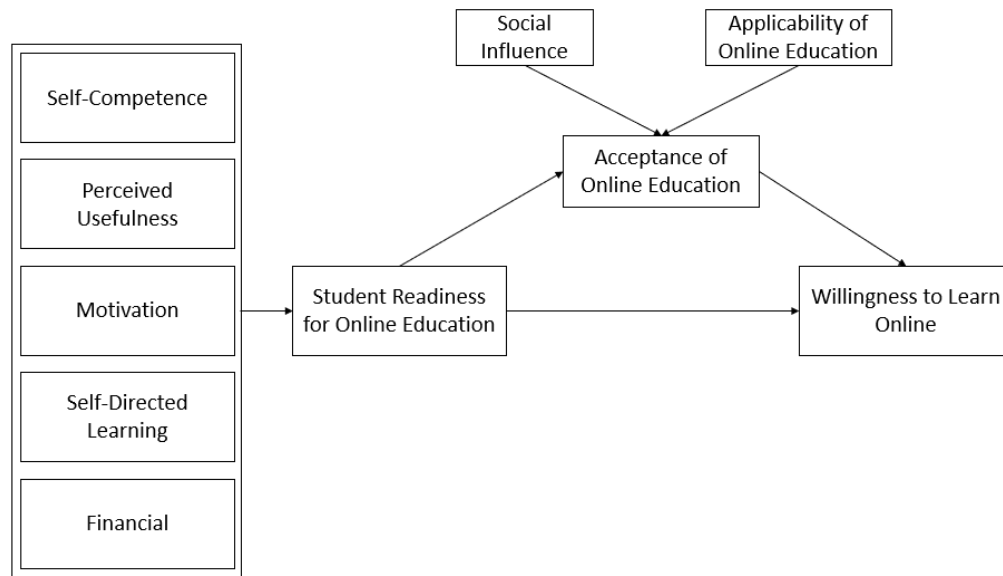


Figure 5.1: Expanded Student Model to Learn Online

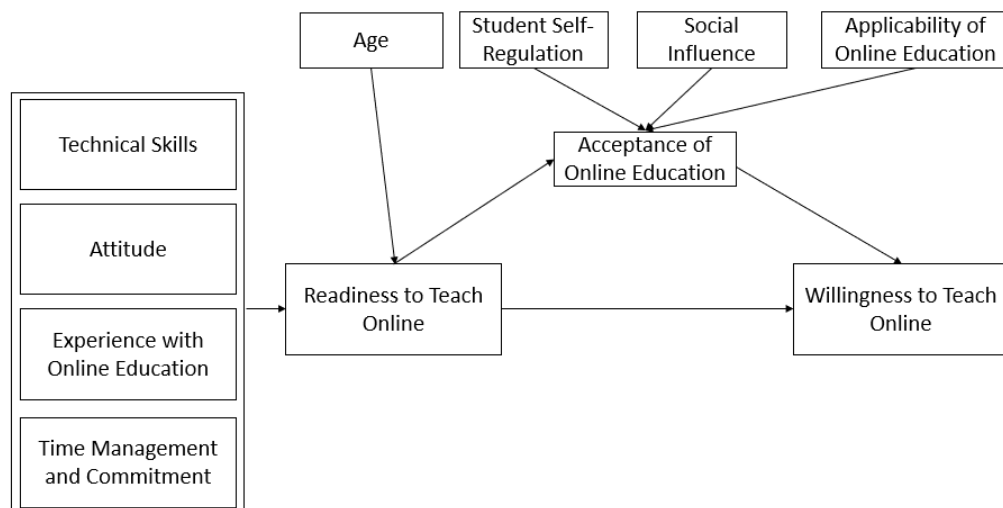


Figure 5.2: Expanded Faculty Model to Teach Online

A third set of contribution was in the final study model on current status of online education and the factors affecting adoption and implementation. The model, Figure 5.3, was verified by three senior academicians and executives form the private and public universities in Lebanon, who suggested minor modifications and accordingly done.

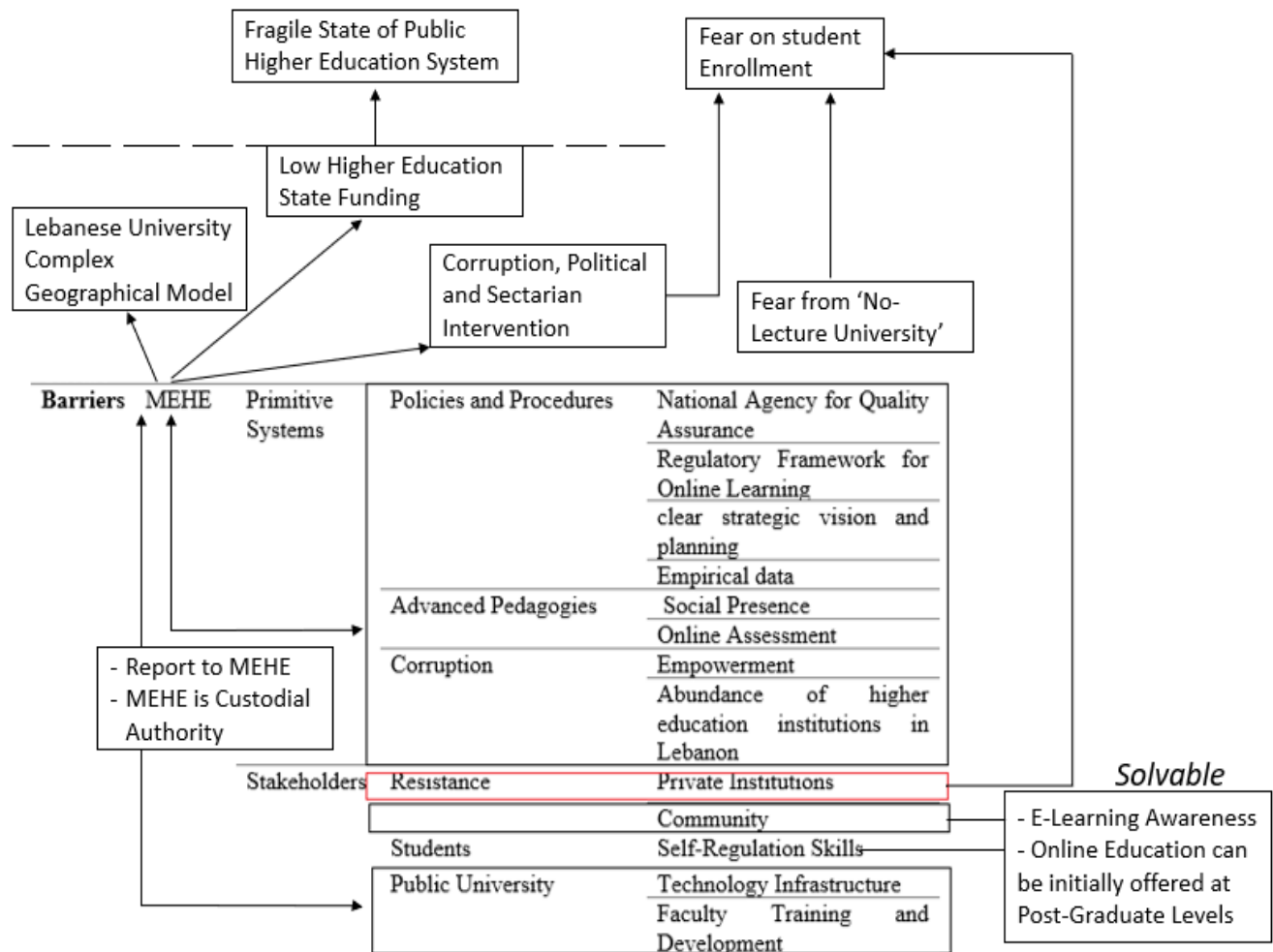


Figure 5.3: Emerging Status of Online Education in Lebanon Model

5.5 Contribution to Knowledge

Several aspects have been identified that would contribute to knowledge under the represented scope of the study:

- (i) The readiness of the Lebanese students for online education and the degree of willingness to participate in online learning have been identified.
- (ii) The perception, acceptance and preferences of Lebanese students for e-learning given separation in time and place were developed
- (iii) The readiness of Lebanese faculty and the level of willingness to teach online were identified.
- (iv) The current pedagogical practices along with acceptance of online education and personal preferences were fostered.
- (v) Factors influencing attitudes towards online education by the end users of the systems were developed.
- (vi) The perceptions of senior institutional executives on opportunities and threats were developed.
- (vii) The perception of the legalizing authority and academic decision makers on opportunities and threats were developed.
- (viii) The experience of ProGreen Diploma along with success pillars and challenges in implementation were reflected.
- (ix) A proposal for capitalizing on prospects, overcoming obstacles, and strategy for implementation was offered.

5.6 Recommendations for Future Work

Many of aspirations regarding this study outstretched the current scope, hence, might be of valuable recommendation for future work:

- (i) Employ more extensive quantitative testing and measure to establish different links between different scale items and variables in the study, to offer more knowledge.
- (ii) Establishing different links and correlations between nominal and scale items, to better understand the possible effect of demography such as gender, type of enrolling university, educational background, etc.
- (iii) Deeper investigation on the self-regulator skills among students that proved to be a requirement for online learning, yet a barrier.

5.7 Practical Contributions

This study starts with an assumption that any adoption and implementation of online learning that is not well accepted and embraced by end users, will present as potential waste of resources, opportunities and time (Farhat 2012; Cowen 2009), therefore this study presents as an important source of practical implications for:

- (i) Private universities that are at the edge of integrating elements of blended learning to their strategical plans and provisions.

- (ii) Private universities who are at the phase of experimenting and testing, where the experiences of other leading and big universities provide a good report on the lessons learned.
- (iii) The Ministry of Education and Higher Education, in terms of empirical findings pertaining to readiness of Lebanese students and faculty, willingness and acceptance.
- (iv) The Ministry of education and Higher Education on evidence-proved prospects and challenges to implement online learning, along with ways to overcome challenges and elements that would optimize chances of success for any implementation strategy.
- (v) Faculty who are currently teaching online classes to understand the perspective and the needs, motives and concerns of students through studying online.

5.8 Limitations

Every research study, and research in the field of education specifically, has its limitations in one way or another, Harrell (2006) conveys. At the quantitative data collection levels, factor analysis could be run over and over again with sharper Cronbach alpha value to try to reduce the 35 questions and do further testing between the four specified variables to see how they relate. In addition, more extensive testing could take place on studying the influence of demographical variables on student readiness and acceptance. Limitations occurred in the mixed findings regarding faculty resistance, from one side quantitative part showed willingness to teach online, but the qualitative part from the various studies

conducted showing resistance among faculty. While Lebanese literature also presents mixed findings, some showing complete acceptance, others resistance, which might indicate that studied faculty in this study were referring to the use of online technologies by teaching online, in other words blended learning rather than pure online modes.

5.9 Concluding Note

Education is a fundamental and basic human right, and online learning has the chance to widen access to education, where a country like Lebanon is marked by social inequalities and sectarian intervention for long. Online education appeared to be on the right track in the biggest and most reputable universities that are by default among the most expensive, and far beyond the capacity of middle class family. In the current status of online education, it is not helping in serving the purpose of the right of any citizen for education, the poor, the Syrian refugee, the mother, the entrepreneur, people at disadvantage like living in remote towns, and disabled. Accordingly, federal funding should invest in digital pedagogies and technologies at public schools and university, and the ministry itself to step up to the challenge. Clear goals and objectives should be identified, along with supportive organizational structure. Second, through online education Lebanon has the chance to transform its prevailing higher education system into advanced ones that better prepares students to life, to careers, to wide contributions and innovations, that shouldn't be missed because of lack of transitional plans and traditional systems. Third, the researcher argues that through online education, Lebanese higher education institutions has the chance to overcome many of the global challenges threatening institutions and transforming them to

educational opportunities, that would allow them to stay competitive and resilient in the changing markets of online education. Finally, addressing the potentials to accommodate advanced pedagogies such as online learning, undisguised the fundamental deterioration of the public higher education system in Lebanon, calling for immediate intervention from highest state authorities to bring back confidence in standards and professionalism.

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Appendix A

Interview Questions Structure

Academic Leader Interview: (Not engaged in online education)

- 1- Please introduce yourself
- 2- What is online education for you?
- 3- Describe your experience if any with online education.
- 4- How do you justify the ministry decision in not accrediting online education?
- 5- Criticality of online learning to the long-term strategy of the university.
- 6- How important is it for Lebanon specifically?
- 7- What are the prospects?
- 8- What are the challenges?
- 9- If accredited, will you implement it. If yes, why?
- 10- What are the challenges towards a policy decision?
- 11- How can we overcome these challenges?
- 12- Or how can these challenges be transformed into opportunities.
- 13- What should institutions focus on to successfully implement online education?
- 14- What should faculty preparation focus on?
- 15- Do you have anything to add?

Academic Leader Interview: (Engaged in online classes)

- 1- Please introduce yourself
- 2- How can you describe the value of online education for Lebanon?
- 3- Why ProGreen Diploma?
- 4- Do you have confidence in the readiness of Lebanese students for online learning?
- 5- Do you have confidence in the readiness of faculty for teaching online?
- 6- How can you justify the ministry decision in not-accrediting?
- 7- Why does your institution embrace it?
- 8- It is essential for the institution to encourage faculty buy-in in order to operationalize its online education plans. But how do academic leaders promote faculty buy-in to teach online?
- 9- Can you tell us about the project?
- 10- How was it implemented?
- 11- Describe systematic implementation
- 12- What were the primary obstacles?
- 13- What were the strategies to overcome?
- 14- What have you learned?
- 15- What are the challenges towards a policy decision?
- 16- How can we overcome these challenges?
- 17- Do you have anything to add?

Instructional Designers Interview:

- 1- Experience in online education.
- 2- Do faculty carry on after finishing development programs?
- 3- What kind of support provided?
- 4- How often it happens?
- 5- Is it 1-1 or group?
- 6- Difficulties faced?
- 7- Criticality of online learning to the long-term strategy of the university.
- 8- Are the faculty ready for online learning in Lebanon?
- 9- What are the learned lessons?
- 10- Suggestions for successful implementation

Appendix B

Questionnaire A

QUESTIONNAIRE

Dear Student,

This questionnaire gives you the opportunity to express your views on a wide range of issues related to taking online courses. Please note that there is no right or wrong answer.

The questionnaire will be used to collect the primary data needed for a research study. Therefore, we seek your assistance to be as open, fair, and honest as possible as you can in your responses.

The researchers assure you that no individuals will be identified from their responses and there are no requests for confidential information included in the questionnaire. The results of the analysis will be strictly used by the researchers for study purposes only.

This questionnaire comprises three parts:

1. General Information
2. E-learner Readiness
3. Short Questions

Thank you

Researcher

* By filling this form, I confirm that I have read the above information and voluntarily agree to participate

PART ONE: GENERAL INFORMATION

Please tick one box for each question:

1. Age: (1) 17 – 24 years (2) 25 – 35 years (3) Above 35 years	 () ()	2. Gender: (1) Male (2) Female	 () ()
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	()		
3. Marital Status: (1) Married (2) Unmarried	() ()	4. Educational Background: (1) Undergraduate Student (2) Masters Student (3) Doctoral Student	() () ()
5. Enrolling University: (1) Public University (State University) (2) Private University	() ()	6. Cumulative GPA (CGPA): (1) 3.00 – 4.00 (2) 2.00 – 3.00 (3) Below 2.00 (4) Unsure	() () () ()
7. Nationality: (1) Lebanese National (2) Non-Lebanese National	() ()		

PART ONE: E-LEARNER READINESS						
Please tick one box for each item:						
NO	QUESTION	Strongly Disagree	Disagree	Undecided	Disagree	Strongly Disagree
Self-Competence: This part shows your ability to						
8	I am competent using a computer:					
9	I am confident with computers:					
10	I am not confident in my knowledge and skills of how to use software for online learning:					
Perceived Usefulness: This part shows your derived be						
11	I believe that using the online learning improves my performance in my studies:					
12	I believe that using online learning will increase my productivity:					
13	I believe that using online learning enhances my effectiveness in my studies:					
Self-directed Learning: This part reflects on your strate						
14	I effectively take responsibility for my own learning:					
15	I am confident in my ability to independently prioritize my learning goals:					
16	I am able to set my own learning goals:					
17	I am independent in my learning:					
18	I am able to manage my study time effectively and easily complete assignments online:					
Motivation: This part reflects your encouragement to le						
19	I am able to complete my work even if there are distractions in my home (i.e. television, children, and such)					
20	I can not complete my work if there are online distractions (i.e. friends, sending e-mails or websites to surf)					
21	Even in the face of technical difficulties, I am certain I can learn the material presented in online learning:					
Financial: This part describes your financial support tha						
22	I can take a loan or borrow money to buy a computer for e-learning purposes:					
23	I have access to a personal computer and Internet access for e-learning purposes:					390
24	My institution provides a computer loan to the student:					

PART TWO: Please take a minute to answer the below short questions in brief:	
25	In your opinion, what are the pros and cons of e-learning? List few.
26	If accredited, would you choose to pursue online degree? Please state the reasons.
27	Are you interested in being interviewed? If yes, or you would like to add further comments,

Appendix C

Questionnaire B

QUESTIONNAIRE

Dear Faculty,

This questionnaire gives you the opportunity to express your views on a wide range of issues related to faculty readiness for online technologies. Please note that there is no right or wrong answer.

The questionnaire will be used to collect the primary data needed for a research study. Therefore, we seek your assistance to be as open, fair, and honest as possible as you can in your responses.

The researchers assure you that no individuals will be identified from their responses and there are no requests for confidential information included in the questionnaire. The results of the analysis will be strictly used by the researchers for study purposes *only*.

This questionnaire comprises three parts :

1. General Information
2. Faculty E-Readiness
3. Short Questions

Thank you

Researcher

GENERAL INFORMATION			
<i>Please tick one box for each question:</i>			
1. Rank (1) Instructor/Teaching Assistant (2) Assistant/Associate/Full Professor	() ()	2. Age (1) Less than 25 (2) 25 - 35 (3) 36 - 46 (4) 47 or above	() () () ()
3. Gender (1) Male (2) Female	() ()	4. Teaching Experience (1) 0 – 2 years (2) 2 – 4 years (3) 4 – 6 years (4) 6 years or above	() () () ()
5. Experience in teaching online courses (1) No course (2) 1 – 2 courses (3) 3 – 4 courses (4) More than 4 courses	() () () ()	6. Education (1) PhD Degree (2) Master's Degree (3) Undergraduate Degree	() () ()
7. Job Status (1) Senior management (2) Middle management (3) Faculty	() () ()	8. Nationality (1) Lebanese National (2) Non-Lebanese National	() ()

E-Readiness *The below items reflect faculty readiness to teach online courses .*

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Technical Skills						
1	I have a computer available to me at home and/or in my office					
2	I travel with a computer					
3	I access the Internet frequently and can search the Internet for what I need					
4	I am competent in using e-mail					
5	I am competent in using word processing software such as Microsoft Word					
6	I am competent in using presentation software such as Microsoft PowerPoint					
7	I am able to download files from the Internet and attach files to an e-mail					
8	I am familiar with and can create a blog					
9	I am familiar with and can create wikis					
10	I am familiar with and can use social networking technologies, such as Facebook and Twitter					
11	I am familiar with the university's course management system					
12	I have used technology to support my face-to-face teaching					
Experience with online teaching and learning						
13	I have experienced at least one online course as a student					
14	I have received training in online instruction					
15	I have used online quizzes in teaching my classes					
16	I have used online discussions in teaching my classes					
17	I have used virtual classroom tools like Eluminate, Adobe Connect, WebEx, or Skype in teaching my classes					
18	I have used chat in teaching my classes:					
19	I have used publisher website in teaching my classes					
20	I have used my university's course management system to support my classroom teaching					
Attitudes Towards Online Learning						
21	I believe that online learning is as rigorous as classroom instruction					

22	I believe that high quality learning experiences can occur without interacting with students face-to-face					
23	I support the use of discussion as a means of teaching					
24	I support learner-to-learner interaction and collaborative activity as central means of teaching					
25	I recognize that community-building is an important component of online teaching					
26	I encourage students to bring life experiences into the classroom and create activities that draw on those experiences					
27	I believe that lecture is the best way to convey content in my discipline					
28	I feel comfortable communicating online and feel that I am able to convey who I am in writing					
29	I am critical thinker and can develop assignments that encourage critical thinking in my students					
Time Management and Time Commitment						
30	I am able to log in to an online course at least once a day					
31	I am able to post to my online class at least 4 to 5 times per week					
32	I am able to manage my time well					
33	I am flexible in dealing with students' needs on such issues as due dates, absences and make up assignments					
34	I am fairly organized and tend to plan ahead in my teaching					
35	I am responsive to my students, responding to e-mail within 48 hrs and assignments within 1 week					

Please take a minute to answer the below questions in brief:

1- Which of the below best describe your instructional strategies:

Authentic activities (real life learning) ☐	Problem solving ☐	Role playing ☐	Articulation and reflection ☐	Collaboration and negotiation ☐
Multi-perspectives ☐	Modelling and explaining ☐	Scaffolding ☐	None of the above ☐	
☐ Other:				

2- Which educational models best describe your classes?

Open learning (learning opportunities beyond formal education systems) ☐	Distributed learning (mix of face-to-face and distance learning) ☐
Learning communities (groups of students with common interests) ☐	Communities of practice ☐
Knowledge building communities ☐	Classical lecturing ☐
☐ Other:	

3- What learning technologies do you use in teaching?

Digital audio and video ☐	Search engines (i.e. Google) ☐	Online database (online journals and library) ☐	Web Link Manager or Edutainment Content ☐
Glossary ☐	Documents ☐	☐ Other:	

4- What technologies do you use in communicating with students?

E-mail	Discussion area	Forum	Chat
Social network	synchronous communication		

5- Would you agree on teaching online courses? Please state the reasons:

- 6- Are you interested in being interviewed? If yes, or you would like to add further comments, please provide your e-mail address/phone number below.

Appendix D

Questionnaire A Piloting

QUESTIONNAIRE	
Dear Student,	
This questionnaire gives you the opportunity to express your views on a wide range of issues related to taking online courses. Please note that there is no right or wrong answer.	
The questionnaire will be used to collect the primary data needed for a research study. Therefore, we seek your assistance to be as open, fair, and honest as possible as you can in your responses.	
The researchers assure you that no individuals will be identified from their responses and there are no requests for confidential information included in the questionnaire. The results of the analysis will be strictly used by the researchers for study purposes only.	
This questionnaire comprises three parts:	
1.	General Information
2.	E-learner Readiness
3.	Short Questions
Thank you	
	Add Consent Statement
Researcher	
* By filling this form, I confirm that I have read the above information and voluntarily agree to participate	

PART ONE: GENERAL INFORMATION

Please tick one box for each question:			
1. Age: (4) 17 – 24 years (5) 25 – 35 years (6) Above 35 years	() () ()	2. Gender: (5) Male (6) Female	() ()
3. Marital Status: (4) Married (5) Unmarried	() ()	4. Educational Background: (3) Undergraduate Student (4) Masters Student (6) Doctoral Student	() () ()
5. Enrolling University: (5) Public University (State University) (6) Private University	() ()	6. Cumulative GPA (CGPA): (5) 3.00 – 4.00 (6) 2.00 – 3.00 (7) Below 2.00 (8) Unsure	() () () ()
7. Nationality: (3) Lebanese National (4) Non-Lebanese National	() ()		

PART ONE: E-LEARNER READINESS						
Please tick one box for each item:						
NO	QUESTION	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Self-Competence						
8	I am competent using a computer:					
9	I am confident with computers:					
10	I am confident in my knowledge and skills of how to use software for online learning:					
Perceived Usefulness						
11	I believe that using the online learning improves my performance in my studies:					
12	I believe that using online learning will increase my productivity:					
13	I believe that using online learning enhances my effectiveness in my studies:					
Self-directed Learning						
14	I effectively take responsibility for my own learning:					
15	I am confident in my ability to independently prioritize my learning goals:					
16	I am able to set my own learning goals:					
17	I am independent in my learning:					
18	I am able to manage my study time effectively and easily complete assignments online:					
Motivation						
19	I am able to complete my work even if there are distractions in my home (i.e. television, children, and such)					
20	I can complete my work if there are online distractions (i.e. friends, sending e-mails or websites to surf)					
21	Even in the face of technical difficulties, I am certain I can learn the material presented in online learning:					
Financial						
22	I can take a loan or borrow money to buy a computer for e-learning purposes:					
23	I have access to a personal computer and Internet access for e-learning purposes:					
24	My institution provides a computer loan to the student:					

Clarify Meaning

Add Negative Statements

PART TWO: Please take a minute to answer the below short questions in brief:	
25	In your opinion, what are the pros and cons of e-learning?
Add List Few	
26	If accredited, would you choose to pursue online degree? Please state the reasons.
27	Are you interested in being interviewed? If yes, or you would like to add further comments, please provide your e-mail address/phone number below.

Thank you for completing the survey...

Appendix E

Questionnaire B Piloting

QUESTIONNAIRE

Dear Faculty,

This questionnaire gives you the opportunity to express your views on a wide range of issues related to faculty readiness for online technologies. Please note that there is no right or wrong answer.

The questionnaire will be used to collect the primary data needed for a research study. Therefore, we seek your assistance to be as open, fair, and honest as possible as you can in your responses.

The researchers assure you that no individuals will be identified from their responses and there are no requests for confidential information included in the questionnaire. The results of the analysis will be strictly used by the researchers for study purposes *only*.

This questionnaire comprises three parts :

4. General Information
5. Faculty E-Readiness
6. Short Questions

Thank you

Researcher

GENERAL INFORMATION			
<i>Please tick one box for each question:</i>			
8. Rank (7) Instructor/Teaching Assistant (8) Assistant/Associate/Full Professor	() ()	9. Age (7) Less than 25 (8) <u>25</u> - 35 (9) <u>36</u> - 46 (10) <u>47</u> or above	() () () ()
10. Gender (3) Male (4) Female	() ()	11. Teaching Experience (7) 0 – 2 years (8) 2 – 4 years (9) 4 – 6 years (10) <u>6 years</u> or above	() () () ()
12. Experience in teaching online courses (9) No course (10) 1 – 2 courses (11) 3 – 4 courses (12) More than 4 courses	() () () ()	13. Education (4) PhD Degree (5) Master's Degree (6) Undergraduate Degree	() () ()
14. Job Status (4) Senior management (5) Middle management (6) Faculty	() () ()	15. Nationality (5) UAE National (6) Non-UAE National	() ()

Fix This

E-Readiness <i>The below items reflect faculty readiness to teach online courses .</i>						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Technical Skills						
1	I have a computer available to me at home and/or in my office	Easy and faculty advanced no need to explain further				
2	I travel with a computer					
3	I access the Internet frequently and can search the Internet for what I need					
4	I am competent in using e-mail					
5	I am competent in using word processing software such as Microsoft Word					
6	I am competent in using presentation software such as Microsoft PowerPoint					
7	I am able to download files from the Internet and attach files to an e-mail					
8	I am familiar with and can create a blog					
9	I am familiar with and can create wikis					
10	I am familiar with and can use social networking technologies, such as Facebook and Twitter					
11	I am familiar with the university's course management system					
12	I have used technology to support my face-to-face teaching					
Experience with online teaching and learning						
13	I have experienced at least one online course as a student					
14	I have received training in online instruction					
15	I have used online quizzes in teaching my classes					
16	I have used online discussions in teaching my classes					
17	I have used virtual classroom tools like Eluminate, Adobe Connect, WebEx, or Skype in teaching my classes					
18	I have used chat in teaching my classes:					
19	I have used publisher website in teaching my classes					
20	I have used my university's course management system to support my classroom teaching					

Attitudes Towards Online Learning						
21	I believe that online learning is as rigorous as classroom instruction					
22	I believe that high quality learning experiences can occur without interacting with students face-to-face					
23	I support the use of discussion as a means of teaching					
24	I support learner-to-learner interaction and collaborative activity as central means of teaching					
25	I recognize that community-building is an important component of online teaching					
26	I encourage students to bring life experiences into the classroom and create activities that draw on those experiences					
27	I believe that lecture is the best way to convey content in my discipline					
28	I feel comfortable communicating online and feel that I am able to convey who I am in writing					
29	I am critical thinker and can develop assignments that encourage critical thinking in my students					
Time Management and Time Commitment						
30	I am able to log in to an online course at least once a day					
31	I am able to post to my online class at least 4 to 5 times per week					
32	I am able to manage my time well					
33	I am flexible in dealing with students' needs on such issues as due dates, absences and make up assignments					
34	I am fairly organized and tend to plan ahead in my teaching					
35	I am responsive to my students, responding to e-mail within 48 hrs and assignments within 1 week					

Please take a minute to answer the below questions in brief:

7- Which of the following best describe your instructional strategies:

Authentic activities (real life learning) ☐	Problem solving ☐	Role playing ☐	Articulation and reflection ☐	Collaboration and negotiation ☐
Multi-perspectives ☐	Modelling and explaining ☐	Scaffolding ☐	None of the above ☐	
☐ Other:				

8- Which educational models best describe your classes?

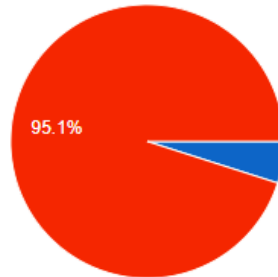
Open learning (learning opportunities beyond formal education systems) ☐	Distributed learning (mix of face-to-face and distance learning) ☐
Learning communities (groups of students with common interests) ☐	Communities of practice ☐
Knowledge building communities ☐	Classical lecturing ☐
☐ Other:	

9- What learning technologies do you use in teaching?

Digital audio and video ☐	Search engines (i.e. Google) ☐	Online database (online journals and library) ☐	Web Link Manager or Edutainment Content ☐
Glossary ☐	Documents ☐	☐ Other:	

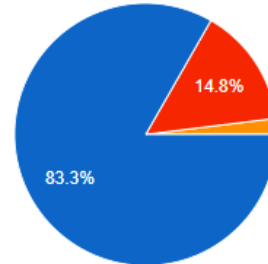
3. Marital Status:

305 responses



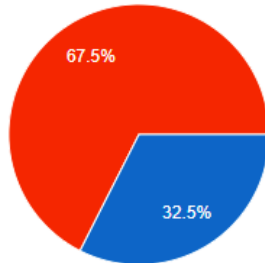
4. Educational Background:

305 responses



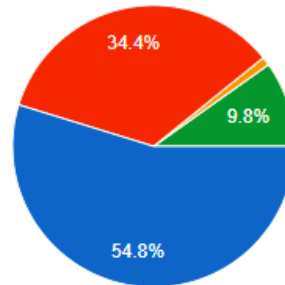
5. Enrolling university:

305 responses



6. Cumulative GPA (CGPA):

305 responses

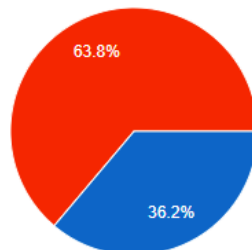


Appendix G

Faculty Responses Demography Diagrams

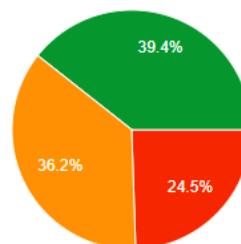
1. Rank:

94 responses



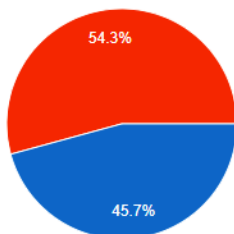
2. Age:

94 responses



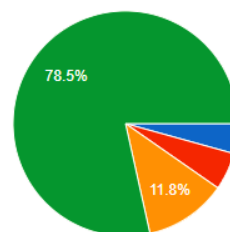
3. Gender:

94 responses



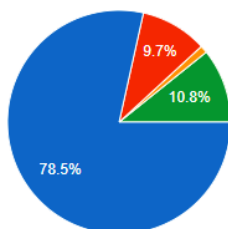
4. Teaching experience:

93 responses



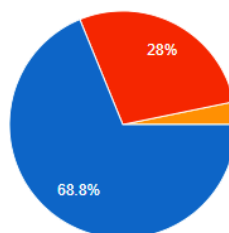
5. Number of online courses you have taught:

93 responses



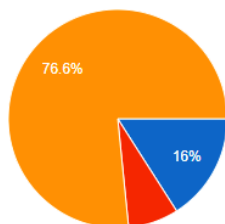
6. Academic qualification:

93 responses



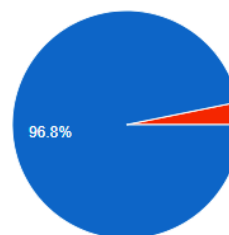
7. Job Status:

94 responses



8. Nationality:

94 responses



Appendix H

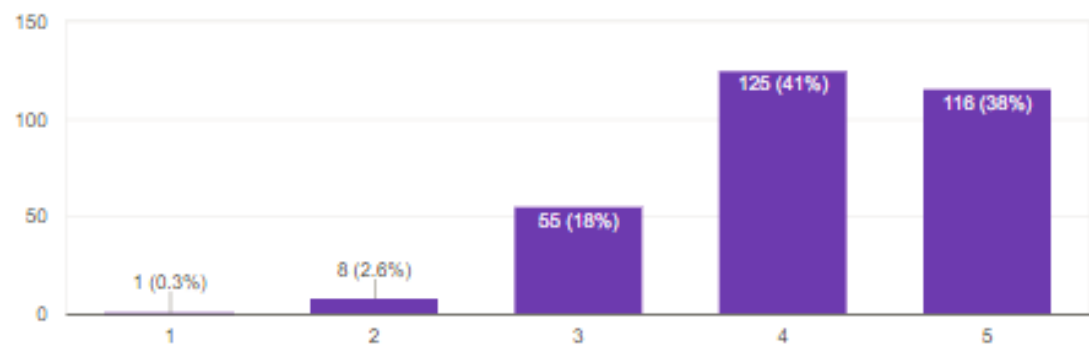
Sample of ELR Questionnaire Responses

E-Learner Readiness

Self-Competence: This part describes your ability to utilize your skills in the use of any computer tool

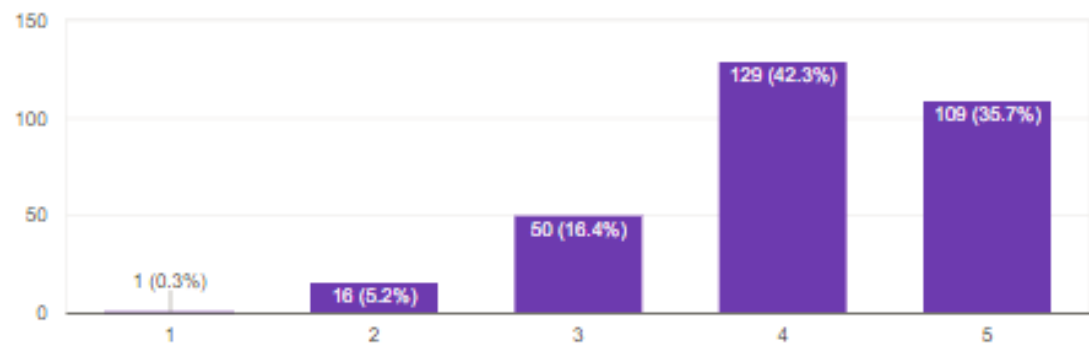
8. I am competent using a computer:

305 responses



9. I am confident with computers:

305 responses



25. In your opinion, what are the pros and cons of e-learning? List few.

305 responses

neerun arceeving

Pros: enhance your information , Cons:computer problem.

Pros: manage time more efficiently with no pressure, study anytime and anywhere, affordable. Cons: many might not be familiar with software and computer techniques, since there's no structure for learning many people would eventually lose motivation in learning because of no fixed schedule

Doesn't fit all fields, on site practice is hard to be covered online, especially in healthcare; direct patient contact is more reliable however e-learning might provide more time for soaps and plans.

Not valuing books are the cons

I can learn from home but i have access to other websites which could be distracting

More practical , we live in a digital age

Easier. Affordable. Less cost (time w energy)

Pros: saves paper, accurate clear deadlines, easy to access web for extra info. Cons: easier to read on paper

Pros: could be completed while at home. Cons: not being able to commit because of all the distractions at home

26. If accredited, would you choose to pursue online degree? Please state the reasons.

305 responses

Yes, easier and cost less time

i can't decide yet, it depends upon the interacion with the lecturer and the overall ambient conditions.

Online degrees if accredited

Yes. More options of studies as i wont be limited by the universities close to me

Appendix I

Research Ethics Form – Low Risk



Research Research Ethics Form (Low Risk Research)

To be completed by the researcher and submitted to the Dean's nominated faculty representative on the Research Ethics Committee

i. Applicants/Researcher's information:

Name of Researcher /student	Nessrin Shaya
Contact telephone No.	050 9034900
Email address	2013121011@student.buid.ac.ae
Date	28/12/2017

ii. Summary of Proposed Research:

BRIEF OUTLINE OF PROJECT (100-250 words; this may be attached separately. You may prefer to use the abstract from the original bid):	The main aim of this research is to obtain a finer-grained understanding of the primary opportunities and challenges to adopt and accredit online education in Lebanon, then offer a strategic plan for successful implementation of online education. In an attempt to induce micro-levels of analysis, investigation took place over four stages: the first reflects the current state of online education in Lebanese higher education sector, denoted by Pre-Study Model, followed by in depth stakeholder analysis of students, faculty, academic leaders and decision makers/Ministry of Education and Higher Education in Lebanon. At this stage, the readiness and perception of students and faculty for online technologies will be explored in addition to the perception of other key stakeholders' and academic decision makers' views to derive a final study
--	--

	model , on the prospects and barriers towards adoption. The third stage will offer solutions to derived barriers and strategies for effective implementation of online classes and programs.
MAIN ETHICAL CONSIDERATION(S) OF THE PROJECT (e.g. working with vulnerable adults; children with disabilities; photographs of participants; material that could give offence etc...):	Nothing uncommon
DURATION OF PROPOSED PROJECT (please provide dates as month/year):	It is estimated that data collection will require 4 months of extensive work
Date you wish to start Data Collection:	September 1 st , 2017.
Date for issue of consent forms:	January 20 th , 2018.

iii. Declaration by the Researcher:

I have read the University's policies for Research and the information contained herein, to the best of my knowledge and belief, accurate.

I am satisfied that I have attempted to identify all risks related to the research that may arise in conducting this research and acknowledge my obligations as researcher and the rights of participants. I am satisfied that members of staff (including myself) working on the project have the appropriate qualifications, experience and facilities to conduct the research set out in the attached document and that I, as researcher take full responsibility for the ethical conduct of the research in accordance with subject-specific and University Research Policy (9.3 Policies and Procedures Manual), as well as any other condition laid down by the BUiD Ethics Committee. I am fully aware of the timelines and content for participant's information and consent.

Print name: NESRRIN SHAYA

Signature: NESSIN SHAYA

Date: 1/9/2017

If the research is confirmed as not medium or high risk, it is endorsed HERE by the Faculty's Research Ethics Committee member (following discussion and clarification of any issues or concerns)and forwarded to the Research Office to be recorded.*

I confirm that this project fits within the University's Research Policy (9.3 Policies and Procedures Manual) and I approve the proposal on behalf of BUId's Research Ethics Committee.

Name and signature of nominated Faculty Representative: _____

Signature: _____ Date: _____

- iv. If the Faculty's Research Ethics Committee member or the Vice Chancellor considers the research of medium or high risk, it is forwarded to the Research Ethics Officer to follow the higher-level procedures.

*** If the Faculty representative is the DoS, the form needs the approval of the Chair of the Research Ethics Committee.**

Appendix J

Sample IRB Completed

An
Institutional Review Board

Application to Conduct Research involving Human Participants/Subjects

Social and Behavioral Sciences IRB Review

(SBS Form B –Non-Nutrition Studies)

(For proposals submitted for expedited or full committee review only)

To ensure a timely and effective review by the IRB, a full description of the planned research must be submitted with the application to conduct research involving human participants/subjects. The research protocol described in the Application provides the reader with background information of the problem under study, including the study rationale, a detailed plan for recruiting and conducting the research involving human research participants/subjects, and a discussion of the potential importance of the research. The IRB must determine that the risks to participants/subjects are minimized consistent with sound research design, that risks are reasonable in relation to the anticipated benefits, selection of participants/subjects is equitable, non coercive, and transparent taking into consideration the purpose of the research and the setting in which the research will be conducted, that informed consent will be obtained from the participants/subjects or their legally authorized representatives, that the participants'/subjects' privacy is respected, that confidentiality of the collected data is protected, that adequate monitoring will be performed to ensure the safety of participants/subjects, and that vulnerable populations will receive additional protections.

1. Project Identifiers:

1A. Project title:

1B. Type of Review

1B.1. Application for Exemption from IRB Review and Oversight

Certain categories of research are Exempt from IRB review and oversight ([45 CFR 46.101\(b\)](#)). If you believe your research qualifies for Exempt Status, do not use this form; please complete the

1B.2. Requested Review

☐ Expedited

☐ Full Committee

1B.3. Application for Expedited Review

If you are requesting expedited review, please indicate the criterion (ia) under which your research project falls:

☐ Clinical studies of drugs and medical devices only when condition (a) or (b) is met.

(a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.)

(b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

☐ Collection of blood samples by finger stick, heel stick, ear stick or venipuncture. For adults, normally not > 450 ml during an 8 week period, and not than twice a week. For children and those

< 50 kg, not more than 50 ml or 3 ml/kg whichever is less during an 8 week period and collection may not occur more frequently than 2 times per week.

☐ Prospective collection of biological specimens for research purposes by noninvasive means, e.g.: non-disfiguring hair and nail clipping, excreta and external secretion, placenta at delivery, amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; mucosal and skin cells collected by buccal scraping or swab, skin swab or mouth washings, etc.

☐ Collection of data through noninvasive means (not involving general anesthesia or sedation) routinely employed in clinical practice **excluding x-rays and microwaves**, e.g.: ECG, EEG, MRI, ultrasound, echocardiography, electrocardiography, electroencephalography, ultrasound, Doppler blood flow, thermography, body composition assessment, moderate exercise by healthy volunteers, muscular strength testing, weighing testing, sensory acuity.

☐ Research involving materials already collected (data documents, records and pathological or diagnostic specimens) or will be collected solely for non-research purposes (such as medical treatment or diagnosis).

☐ Collection of data from voice, video, digital or image recordings made for research purposes.

☐ Research on individual or groups characteristics or behavior such as perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior, test development where the investigator does not manipulate that subject's behavior and no stress to the subject may occur, or research using survey, interview, oral history, or quality assurance methodologies. (some research in this category can be exempt)

Appendix K

Subject Consent Form

CONSENT FORM

The British University in Dubai and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information it contains are given to you for your own protection and full understanding of the procedures. Your signature on this form will signify that you have received a document which describes the procedures, possible risks, and benefits of this research project, that you have received an adequate opportunity to consider the information in the document, and that you voluntarily agree to participate in the project.

Any information that is obtained during this study will be kept confidential to the full extent permitted by law. Knowledge of your identity is not required. You will not be required to write your name or any other identifying information on the research materials. Materials will be held in a secure location and will be destroyed after the completion of the study.

Having been asked by Nisrine Shaya, a Doctorate student at The British University in Dubai to participate in:

A research study on Quality of Online Education in Lebanon: Prospects and Challenges

The study is part of her doctoral dissertation and intended to be published in reputable journals and the findings presented in international conferences. The empirical part of this research along with adequate literature review will produce a model that document and describe the efforts put forth to establish quality online education in Lebanon.

Purpose:

An examination of the dominant features of education and academic institutions of the third millennium shows that among chief characteristics are flexibility, collaboration, and extended institutional boundaries. Higher education must undergo necessary changes to adapt the traditional educational structures to the uprising knowledge age. Contrary to neighboring countries, to date Lebanon doesn't officially recognize distance learning due to issues related to doubts in quality following online learning, readiness of personnel and availability of technology infrastructure, and the abundance of higher educational institutions given the small geographical area of Lebanon. The main aim of this research is to obtain a finer-grained understanding of the primary barriers and challenges to adopt and accredit online education in Lebanon, then offer a strategic plan for successful implementation of online education. Research suggests that evaluating the operational status of online education systematically and empirically, a multi-faceted form of analysis is needed to unravel the influence of multiple of factors on individual parameter of effectiveness in online education. In an attempt to induce micro-levels of analysis, investigation will take place over four phases: the first will reflect the current state of online education in Lebanese higher education sector, followed by in depth analysis of student and faculty readiness for online technologies. The third phase will document the pioneering experience of AUB and LAU in offering online post-graduate diploma in green technologies then examination of online students' satisfaction and perceived learning. The forth phase will explore the perception of key stakeholders' views (namely ministry executives, academic leaders and parents) on future prospects of online education in Lebanon. The findings will be presented as a proposal with a number of policy options that could be scrutinized for further evaluation towards developing a policy that would adopt online learning

The framework of this research draws upon the e-learning theoretical framework developed by Aparicio et al. (2015) and Haddad's (1995) education policy planning process to situate the study. It will be conceptualized from a Pragmatic philosophical

standpoint and employ the Explanatory Sequential research design as a basic research approach. Data will be collected quantitatively through surveys, qualitatively through document analysis and interviews.

Barriers related to workability of online education, poor infrastructure, financial constraints, inadequate Internet quality and technical support, lack of e-learning knowledge, faculty resistance, lack of quality assurance agency in addition to other pedagogical, cultural, psychological and social challenges are expected to surface. An analysis of potential strategies to overcome obstacles and doubts will follow.

Keywords: Higher Education, Online Education, Lebanon, E-Readiness

Interview process:

There will be a number of interviews, each 1 hr 30 mins long and held in a place chosen by the participants.

I will be using a voice recorder upon the agreement of the participant and in case of disapproval notes will be taken. The interviews will be transcribed with code identifiers only and with all other identifiers removed and a copy will be given to the participants for their approval. The tape, interview notes, and transcription will be kept in a locked cabinet and the researcher will be the one with sole access to it. Upon completion of the research, the tapes and original transcripts will be destroyed.

I have read the procedures specified in the document.

I understand the procedures to be used in this study and any personal risks to me in taking part.

I agree to participate by taking part in: / / 2018

At: _____, at _____

I understand that I may withdraw my participation in this study at any time.

I also understand that I may register any complaint I might have about the study with the researcher named above or with:

Dr. Solomon David, Director of Studies (Supervisor)

Faculty of Education at The British University in Dubai

Telephone number: +971 4 279 1400 Ext: 462

solomon.david@buid.ac.ae

I may obtain copies of the results of this study, upon its completion, by contacting:

Name: Nisrine Shaya

Mobile: +971 50 9034900

Email: 2013121011@student.buid.ac.ae

I have been informed that the research material will be held confidential by the Researcher.

I understand that my supervisor or employer may require me to obtain his or her permission prior to my participation in a study such as this.

NAME (Please type or print legibly):

ADDRESS:

SIGNATURE:

DATE:

ONCE SIGNED, A COPY OF THIS CONSENT FORM SHOULD BE PROVIDED TO THE SUBJECT