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Research Article

Readiness and Perception of Faculty Towards Online Crisis Teaching during Covid-19 Outbreak: A Study of Lebanese Institutions of Higher Education

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Abstract

The study reports on higher education faculty readiness for online teaching and learning following the outbreak of Covid-19 virus in Lebanon and the transition to virtual learning environments, using Assessment of Faculty Readiness to Teach Online scale. The survey explored faculty acceptance of online education and how effective are the adopted pedagogical practices with online learning environments. Mixed method research approach was employed to generate a comprehensive final study model on key findings framed under prospects and barriers. Responses implied adequate levels of readiness to teach online, yet, requiring intervention to excel in online teaching, despite familiarity with the use of course management system and online discussions to support teaching, slightly positive perception that online education is as rigorous and efficient as face-to-face instruction. Thematic analysis led to an emergent status of faculty perception towards online education were prospects lie in recognizing online teaching as a catalyst for higher education pedagogy reform, confidence in use of technology, perceived usefulness for students pertaining to interpersonal development, career-life balance and access to education, while barriers emerged as doubts in the technological infrastructure of some institutions, students' self-regulation skills, program applicability and job relevance.

Keywords: *Faculty Readiness, Acceptance, Online Education, Pedagogy, Higher Education, Prospects, Barriers*

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Introduction

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 examine faculty readiness and acceptance of online teaching and learning. 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.

This study was conducted prior to the outbreak of the virus and transition to online environments, reflecting faculty readiness to teach online and face the complexities brought forth by online teaching and learning. Therefore, the study seeks to answer the following main and sub-research questions:

- 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 variable and its components?
    - Is there a relationship of statistical significance between student various demographic and e-readiness?
    - How compatible are the current adopted pedagogies with online education?

Three main hypotheses are proposed:

H1: There is a relation of statistical significance between *Faculty E-Readiness* and its components.

H2: There is relation of statistical significance between *Gender* and *Faculty E-Readiness*

H3: There is relation of statistical significance between *Age* and *Faculty E-Readiness*

Theoretical Framework and Literature Review

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.

Faculty Readiness to Teach Online

This research aims at assessing 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.

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.

Most research on online learning for teaching faculty 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).

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 few 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. 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 fist 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.

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, nut 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.

Methodology and Data Analysis

Aiming at data triangulation, mixed methods research design was employed. 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. The target population was teaching faculty members in private and federal Lebanese higher education institutions, in Beirut. Convenience sampling took place, where subject participation was voluntary and far from awarding financial incentives. A total of 94 responses were collected. The questionnaire had 3 main sections covering: (1) faculty demographical data, (2) measuring the variable faculty e-readiness as a multi-dimensional facet composed of 4 factors and 35 scale items in total, and (3) examining 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 at al. (2016). SPSS v.20 was used to analyze statistical data.

Measuring Faculty Readiness to Teach Online

The current research understudy adopts 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 in below figure.

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 1: Faculty Readiness Scale

The questionnaire categorizes faculty based on achieved score, to as either beginner, intermediate or advanced, which has the capacity to induce objective and sound decision making. A total of 175 points are possible, score less than 90 would indicate beginner level, 90 – 150 score intermediate level and above 150 is advanced (Chi 2015).

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

Table 1: Readiness Criterion

Demographic Data of Respondents

A total of 94 responses were collected. 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%. 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.

Factor Analysis

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 factors scored .500 and above 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. Therefore, 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.

Reliability Test

Reliability Test was conducted and showed high overall alpha Cronbach .843, 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.

	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 2: Faculty Readiness Scale Reliability Test

Readiness Criterion and Scores

To assess faculty members' readiness levels, the total score is computed by adding all achieved scores on each individual category. As Pallof and Pratt (2011) ascertains, 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 = You 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 3: Faculty Readiness Results

Results indicated that 85 respondents, scored between 90 and 150 points, scores of only 3 respondents fell below 90 points, and 6 scored above 150. Accordingly, 90% of faculty are at the intermediate level and will need some support to excel and master online teaching, while, 6% of faculty are 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.

Mean Scores of E-Readiness Items

To further analyze and reflect on the above results, this study adopts 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.

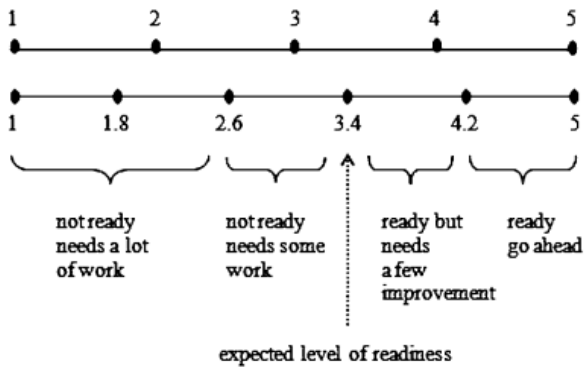

Figure 2: E-Learning Readiness Assessment Model

	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	2.9043	1.21875

	occur without interacting with students face-to-face		
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: Mean Scores of Faculty Readiness Scale Items

Results on levels of readiness could be summarized in below table.

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 5: Faculty Readiness to Teach Online Results

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 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 H1. 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 ρ = .01. Therefore, H1 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.

Moreover, the Beta weights 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
		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 6: Beta Weights for Faculty Readiness Components

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

H2: There is relation of statistical significance between demographic variables and *Readiness*

- **H2a: There is relation of statistical significance between *Gender* and *Readiness***

An independent-samples t-test was conducted to compare faculty e-readiness levels among in relation to gender, female or male. Gender wasn't found to have significant effect on e-readiness. 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 ρ = .993 which is greater than .05.

- ***H2b:* There is relation of statistical significance between *Age* and *Readiness***

There exists a negatives correlation between the independent demographic variable age of faculty and Faulty E-Readiness. The relation is significant at the .01 level, with corresponding significant value of ρ = .009, the relation is moderate where the correlation coefficients is r = -.267. These findings confirm the hypotheses H2b, 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. 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 (ρ = .001), indicating that there is less than 0.1% chance that such a value of F-ratio would occur, if a null hypothesis (H0 instead of H1) was true. The t-statistic value is 2.067 with a significance value accounting for .04. The value of b1 = -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.

Qualitative Findings

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

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: 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 7: Faculty Acceptance Prospects Components

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.

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 8: Faculty Acceptance Barriers Components

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

The quantitative analysis showed that the majority of faculty members possess the required skills and will need 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:

A quantitative analysis of the qualitative data presents 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		34%		

face-to-face and distance learning)		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 9: Pedagogical Practices Results

Results showed that 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) was used to assess the qualitative findings, that classified adopted instructional strategies in order of importance. 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 10: 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. 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.

Discussion of Findings

Aiming at triangulation of data, faculty readiness findings were cross checked and verified across pedagogical readiness findings and behavior to better understand the main study variables. Discussion of findings will take place in the light of international literature and that of Lebanese specific.

Global E-Readiness and Pedagogical Readiness of Faculty

Analysis revealed that the faculty are qualified to teach online courses in a country where online education is banned from the public. 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 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.

Regarding pedagogical readiness and 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.

Global Pedagogy and Preference for Blended Learning

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. 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.

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. 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.

.**Faculty Access to Computers and Technology Literacy**

Data 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. 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), in line 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.

Technology-Enabled Pedagogy that is Compatible with Online Instruction

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. 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.

Competency in Using Basic and Advanced Online Communicative Tools

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, 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.

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" (,p. 200).

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 other hand, expressed limited applicability of online education is a barrier, where faculty, similarly to students, senior leaders and MEHRE, confirmed 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 form international context literature. These findings attest Turkey and Cherney (2016) and Tarhini et al. (2013).

Therefore, prospects lie in perceived usefulness for students.

Findings following triangulation and discussion of findings led to the formation of the below model:

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 11: Final Study Model

Recommendations for Future Work

The current topic understudy revealed faculty readiness to teach online, their levels of acceptance of online education, along with pedagogical readiness, hence, building up on findings suggest further exploration in terms of:

- Expanding the emerging quantitative model and include more variables such as perceived ease of use, perceived usefulness and subjective norms.

Re-assessing data post pandemic, where most of the institutions were operating online, aiming at a comparative study.

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