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E-readiness of Engineering Students in Morocco: Students at Mohammadia School of Engineers- Rabat as a Case Study

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Abstract

In a fast-changing world, technology is invading every sector of life. Technology has implications in literally every domain: economy, governance, communication…etc. Education, as well, can benefit from the various advantages of ICT and online education. However, the latter is a unique form of education that requires human, pedagogical and infrastructural preparations. Scholars confirm that students must be e-ready in order to benefit from online education. e-readiness implies having pre-requisite skills and competencies of online education. This study sheds light on the e-readiness of students at Mohammedia school of engineers in Rabat following the framework of Hung et al (2010). It investigates the preparedness of students for online education by analyzing their' attitudes, learning style, technical skills and motivation. This is a quantitative study that collects data with a questionnaire from 114 students. The result reveals that students at Mohammedia schools of engineers have a moderate level of e-readiness.

1. INTRODUCTION

Online education is no longer a theory or a dream, it is a reality that grows every minute. The growth of online education is nurtured by the ubiquitousness of laptops/ smartphones and students' acquaintance with technological gadgets (Cook & Sonnenberg, 2014). In addition, Covid-19 pandemic gave unprecedented prominence to online education throughout the world (ouahabi et al, 2021). In Morocco, the ministry of education urged teachers to shift to online education as the only possible alternative during the quarantine. Admittedly, the experience of online education during the quarantine in Morocco faced many challenges and obstacles. (Draissi & ZhanYong, (2020); Belamghari, (2022); Hibbi, Abdoun & El Khatir, 2021)

In fact, the shift to online education during the Covid-19 pandemic in Morocco uncovered three main ideas: firstly, online education cannot be a substitute for classroom education but if done properly, it can maintain the teaching/ learning process (Ouahabi et al,

2021). Secondly, online education is different from classroom education, applying the techniques of brick-and-mortar classroom in an online classroom can lead to failure (Jebbour, 2022). Thirdly, Moroccan teachers and students faced a lot of challenges in implementing online education (Mounjid et al 2021; Razkane, Sayeh & Yeou, 2021; Belamghari, 2022). The last conclusion gave rise to the concept of e-readiness which studies the preparedness of students and teachers for online education by investigating whether or not they have the necessary skills and conditions for online education. Hence, this study aims to answer the following questions:

To what extent students at Mohammadia school of engineers in Rabat are e-ready?

Does gender affect e-readiness?

Is there any correlation between students Grade level and e-readiness?

2. LITERATURE REVIEW

2.1.E-readiness in education

e-readiness is a vast area of research, it has implications for economy, politics, communication, tourism...etc. Generally speaking, e-readiness measures the preparedness of a certain community or sector for new projects or modifications that are related to technology (Dada, 2006; Dakduk et al, 2018). Similarly, in the realm of education, e-readiness focuses on the preparedness of teachers/students for online education. The notion of e-readiness for online education was first presented by Warner et al (1998). They define e-readiness as students' preparedness and preference for online education over face-to-face education. Rohayni et al (2015, P. 231) state that "e-readiness is defined as an institution's readiness in developing e-learning which means mentally and physically ready to implement e-learning". The authors ensure that for an effective implication of online education, teachers, students and institutions should be e-ready. Machado (2007) defines e-readiness as the ability of institutions and stakeholders to "generate e-learning opportunities by facilitating computer-based technologies "(p. 74). Clearly, in the information age, success is largely dependent on the integration of ICT in various domains (Mutula & Van Brakel, 2006). Priyadarshini and Bhaumik (2020) note that e-readiness covers two areas: a) technical competence which enables students/ teachers to use gadgets and platforms effectively and b) their perceptions and attitudes toward online education.

in the literature, there is a consensus over the importance of e-readiness for the success of online education (Rohayani, 2015; Penna & Stara, 2008). Tubaishat and Lansari (2011) state that "a student's success in e-learning course often depends on the foundation of his/her readiness. Therefore, prior to implementing any e-learning initiative, the institution must take

into careful consideration the readiness of students" (p. 216). studies of e-readiness can help institutions develop strategies for a better implementation of online education because they shed lights on the areas that needs further attention (Abas et al, 2004). "an e-readiness assessment questionnaire could help learning environment examine the quality and effectiveness of an implementation and to provide objective measures to improve" (Goh & Blake, 2021, p. 5). By large, e-readiness studies serve as a guiding map for any ICT project, they can provide answers to some fundamental questions as: what is needed? In what way? And for what purpose (Gaertner et al, 2016). Scholars (Ilgaz, & Gülbahar, 2015; Sahoo, 2020), however, caution that e-readiness in education shouldn't be understood as merely the affordance of technological gadget (infrastructure) and technical competence. Instead, Students/ teachers should develop pedagogical competence which can help them teach/learn effectively in the online environment

Still, there is a growing need to define what makes students e-ready. Rohayni et al (2015) conducted a literature review of the e-readiness assessment models. They found that scholars use different factors as indicators of e-readiness. Some of the widely used indicators of e-readiness are: policy, knowledge, skills, experience, attitudes, motivation, habits, technology, financial/human resources, infrastructure, content, culture, organizational barrier, and psychological barrier. Selwyn (2011) declares that e-readiness includes three kinds of qualities and competencies: personal, technical and pedagogical. In this study, however, we adopt the model of Hung, Chou, Chen and Own (2010). It is a widely used model that consists of five dimensions as indicators of e-readiness: self-directed learning, motivation learner-controlol, computer and internet self-efficacy and online communication self-efficacy. These are defined in the following table

Dimensions of students' e-readiness	**Definition**
Self-directed learning (SDL)	Knowels (1975) defines SDL "as a process in which individuals take the initiative in understanding their learning needs, establishing learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (cited in Hung et al, 2010, P. 1081)
Motivation	The dimension of motivation for learning can significantly facilitate learners' efforts to be compatible with the learnersn desire and to enhance

	their learning, retention and retrieval (Esra & Sevilen, 2021; Hartnett, 2016)
Learner-control	"In the broadest sense, learner-control is the degree to which a learner can direct his or her own learning experience and process" (Shy & Brown, 1992. Cited in Hung et al, 2010, p. 1082)
Computer and internet self-efficacy	"an individual's perception of his or her ability to use computers to accomplish a task, such as using software to analyze data" (Hung et al, 2010, p. 1083)
Online communication self-efficacy	The ability to overcome the limitations of online communication and create opportunities to interact, participate and communicate effectively. (Hung et al, 2010)

2.2.The state of Online education in Morocco

Morocco, as many other developing countries, has been striving to boost online education and ICT in general. Kettani (2015) states that the development of ICT in Morocco went through 3 phases: a) the period between 1994- 2000 which witnessed the liberalization of the telecommunications field and the launching of the first ICT park in Morocco. b) the period between 2000- 2008 included many projects that aim at: enhancing the legal framework, and enforcing the infrastructure and internet accessibility, in addition to trainings/ preparations of ICT skills. The period between 2009- 2013 included social transformation as many families and individuals got their own PCs and phones, the digitalization of many public services, the enforcement of ICT industry.

In Moroccan education, however, the development of ICT has always been an objective of stakeholders and ministry alike. The national charter of education and training (1999) urged educational officials to generalize ICT to all levels within a decade. Later on, ICT integration was manifested in many programs like: GENIE (generalization of information and communication technologies in education), NAFIDA, INJAZ, MARWAN (Moroccan Academic and research Wide Area network) and emergency plan (2009- 2011) (Bouziane, 2019). However, "despite the continuous efforts, developmental initiatives, high investments and previous research implications, the use of ICT in higher education in Moroccan can be best described as sporadic or in some cases as lagging behind" (Bouziane & Elaasri, 2019, P. 204).

Effective ICT integration goes beyond the affordability of technology to the positive effect of technology on the community (Tolica, Sevrani & Gorcia, 2015). Bouziane (2019) confirm that while Morocco has invested hugely in ICT, its effect is poorly noticed on the field of education. Laabidi & Laabidi (2016) investigated the barriers affecting successful

integration of ICT in the Moroccan university. 46 university teachers of English from Moulay Ismail University and Sidi Mohamed ben Abdellah- Dhar El Mehraz- Fes. Their data revealed that teachers hold positive attitude toward online education but they still face multiple obstacles such as: large classes, lack of computers and internet, and insufficient technical support. Benali et al (2018) investigated the digital competence of 160 Moroccan English teacher. They found that teachers excel in some aspects as searching for and selecting digital resources, teaching online with a high confidence. Still, teachers need to develop: differentiation and personalization of learning, and facilitation of learners' digital content. Students, on the other hand, have smartphone and computers but they rarely use it for learning. ANRT (2015) declares that the majority of Moroccans use the internet for entertainment. Kettani (2015) finds that ICT is still far from efficiently affecting society (education) as there is a lack of ICT Skills (quality and quantity). Bouziane & Elaasri (2019) enforce the same idea in the following quote: "Concretely speaking, the obstacles of using ICT in Morocco, both at work and in studies, are not related to infrastructure or hardware or software; rather, they are related to human resources" (p. 211).

It is worth noting that Covid-19 pandemic gave an unprecedented prominence to online education In Morocco and the world. So many research papers revolved around online education during covid-19 pandemic in Morocco. Studies investigated challenges and opportunies (Anigri, 2021), the impact of the shift to online education on academic achievement of students (Hibbi et al, 2021), teachers' attitudes (Razkane, Sayeh & Yeou, 2021) and students' attitudes (Laabidi, et al, 2022). Broadly speaking, these studies and others revealed a high tendency toward online education but also the existence of major barriers of a better implementation of online education in Morocco as: large classes, lack of technical support and incompetency in effectively teaching/ learning online.

3. METHODOLOGY

This is a quantitative study that aims to assess the e-readiness of Engineering students at Mohammadia school of Engineers in Rabat. It investigates whether or not students have the pre-requisite skills and competencies of online education. Arguably, the majority of students have smartphone and PCs, they are "technology natives". However, there is a need to check if they can use them effectively in online education. Holsapple & Lee-Post (2006) states that e-ready respondents should score 4 out of five in their mean score. Hafa, Hafa & Moubtassime (2023) provide the following scale to determine the level of e-readiness in accordance with the mean-score value.

Scale level	Response value
1_2, 33	Low

2,34_ 3,66	Moderate
3,67_ 5	high

The sample of this research consists of 114 engineering students. the selection of this group of respondents is based on their availability. The sampling is carried out using non-probabilty (convenience/ availability) sampling strategy. The demographic data reveal that 56,1% are males and 43, 9% are females. Their school years are: 1st year (62,6%), 2nd year (27,8%), and 3rd year (9, 6%). They belong to different departments of engineering: industrial, mechanical, civil and computer science.

3.1. Data collection tool

The online learning readiness scale (OLRS) (Hung et al, 2010) is used as the main data collection tool. It is a highly adopted scale; more than 1200 study have cited this model. In addition, the reliability of the scale constructs ranges between 0,727 and 0,867. Researchers assert that a reliable construct should exceed 0,7 (Fornel & Larcker, 1981). The validity of the scale was calculated using average variance extracted (AVE), which should exceed 0,50 (Fornel & Larcker, 1981). Three of the five constructs exceeded 0,5 and are hence valid except two constructs that scored slightly below: computer/internet self-efficacy (0,468), learner control (0,477). For discriminant validity, Hung et al (2010) calculated the square root of constructs, which should exceed 0,5 (Fornel & Larcker, 1981). The square root ranges between 0,697 and 0,828 hence the scale is valid.

3.2. Research hypotheses

This research is based on the following hypotheses:

Students at Mohammadia school of engineers- Rabat have the necessary skills for online education and are, hence, e-ready.

Gender does not affect e-readiness's dimensions.

Students' e-readiness changes according to their grade level.

4. RESEARCH FINDINGS

Table 1 : gender of the respondents

		Count	Column N %	Row N %
Gender	Male	64	56,1%	100,0%
	Female	50	43,9%	100,0%

To start with, our sample is composed of 114 respondents. 56,1% are males and 43,9% are females.

Table 2: Grade levels of participants

		Count	Column N %	Row N %
Grade level	1st year	72	62,6%	100,0%
	2nd year	32	27,8%	100,0%

	3d year	11	9,6%	100,0%

As stated earlier, our respondents are students at Mohammedia School of Engineers in Rabat. They access this school after spending two years at the preparatory classes. 62,6 % are first year students, 27,8% are second year students, and 9,6% are third year students.

Table 3: Students' scores in Computer/ internet self-efficacy

	N	Minimum	Maximum	Mean	Std. Deviation
I feel confident in performing the basic functions of Microsoft Office programs (Word, Excel, PowerPoint)]	113	1	5	3,94	,975
I feel confident in my knowledge and skills of how to manage software for online learning (googlemeet, Zoom, Microsoft Office).	113	1	5	3,81	1,031
I feel confident in using the Internet (Google, Yahoo) to find or gather information for online learning.	113	1	5	4,13	1,056
overall means of internet self-efficacy	114	1,00	5,00	3,9649	,91783
Valid N (listwise)	111				

Table 3 shows that students scored high in statement 1 (3,94) and 2 (3,81). While they scored higher in statement 3 (4,13). The overall mean score for this item is 3,96 which shows that students have the essential internet skills. They can search for information in the internet and use the basic programs as Word, excel, zoom…etc. This is not surprising considering their age and major. They are "technology natives" and future engineers with a high interest in technology. So basic internet skills is a trivial task for them.

Table 4: students' scores in self-directed learning

	N	Minimum	Maximum	Mean	Std. Deviation
I carry out my own study plan.	111	1	5	3,75	1,040
I seek assistance when facing learning problems.	114	1	5	3,37	1,099

I manage time well.	113	1	5	2,81	1,042
I set up my learning goals	114	1	5	3,52	1,138
I have higher expectations for my learning performance.	113	1	5	3,65	1,026
overall means of self-directed learning	114	1,00	5,00	3,4132	,78159
Valid N (listwise)	109				

Self-directed learning is essential in online education. in the physical absence of teachers, students should be able to hold more responsibility over their learning. Table 4 shows that students have moderate level of e-readiness in self-directed learning with scores ranging between 2,81- 3,65. However, in question 1 (I carry out my own study plan) they scored high (3,75). Obviously, at the university level, students know the best way to understand courses and prepare for exams, however they are easily distracted by the internet and face a big problem in time management (2,81). This can be accounted for by their excessive use of social media, they are easily distracted by social media notifications and messages. The overall mean of self-directed learning is moderate (3,41).

Table 5 :students' scores in learner-control (in online context)

	N	Minimum	Maximum	Mean	Std. Deviation
I can direct my own learning progress.	113	1	5	3,65	1,052
I am not distracted by other online activities when learning online (instant messages, Internet surfing).	113	1	5	2,55	1,225
I repeated the online instructional materials on the basis of my needs.	109	1	5	3,39	,961
over all means of learner-control (in online conetext)	114	1,00	5,00	3,1915	,82495
Valid N (listwise)	107				

Learner-control is a decisive factor in online education. students showed a moderate level in learner- control. Their mean scores range between 2,55 and 3,65. The overall mean score of this part is 3,19 which is also moderate. Obviously, keeping focus in online education is really challenging given the limitless online distractions (messages, youtube and other social media platforms).

Table 6: students' scores Motivation for learning (in an online context)

	N	Minimum	Maximum	Mean	Std. Deviation
I am open to new ideas	114	1	5	4,17	,995
I have motivation to learn.	114	1	5	4,04	1,051
I improve from my mistakes.	114	1	5	4,04	1,030
I like to share my ideas with others.	114	1	5	3,96	1,017
overall means of motivation of learning (in an online context)	114	1,00	5,00	4,0504	,85844
Valid N (listwise)	114				

Students' motivation is another decisive factor in the success of online education. students' negative attitude or demotivation can be a real impediment to the successful implementation of online education. students showed a high motivation to learn online. Their mean scores range between 3,96 and 4,17. The overall mean score of learners' motivations is 4,05 which is evidently high. It demonstrates students' eagerness and positive attitude toward online education.

Table 7: students' scores in online communication self-efficacy

	N	Minimum	Maximum	Mean	Std. Deviation
I feel confident in using online tools (email, discussion) to effectively communicate with others.	114	1	5	3,83	1,080
I feel confident in expressing myself (emotions and humor) through text.	114	1	5	3,50	1,278
I feel confident in posting questions in online discussions.	112	1	5	3,17	1,215
overall means of online communication self-efficacy	114	1,00	5,00	3,5029	,94723
Valid N (listwise)	112				

Online communication self-efficacy refers to students' ability to communicate effectively in an online setting. Students expressed a moderate level of e-readiness in this category with mean scores ranging from 3,17 to 3,83. The overall mean of this category is 3,5029.

5. DISCUSSION

Question 1: To what extent students at Mohammedia school of engineers are e-ready?

The findings of this research show that students at Ecole Mohammedia of Engineers in Rabat have a moderate level of e-readiness. The overall mean-scores are: 3,96 for Computer/internet self-efficacy, 3,41 for self-directed learning, 3,91 for learner-control (in online context), 4,05 for Motivation for learning (in an online context), and 3,50 for online communication self-efficacy. It is a positive result considering the fact that online education in Morocco is still in its infancy stage and the only experience students had with online education was during Covid-19 pandemic.

On the one hand, findings show that students excel in some parts of the questionnaire. For example, respondents can easily search the net for information (4,13) and use basic Microsoft office software (Word, excel, power point) (3,94). Students also exhibited a high motivation for learning online (4,05) which reflects their positive attitude and willingness to experience online education. it is a normal attitude given the fact that most of these students are already immersed in technology and also, as engineers, most of their courses are well explained on Youtube and other platforms.

On the other hand, Findings also show that students face difficulty in maintaining their focus online. The mean score of "I manage time well" is 2,81 and "I am not distracted by other online activities when learning online" is 2,55. Online distractions, as social media and instant messages, are a real challenge to effective online education. students can't restrain themselves from continuously checking their phones. Hence, online learners should have a high sense of self-discipline in order to deal with online/offline distraction.

To recapitulate, the overall mean-score of the likert-scale is 3,62 (table 8). It shows that respondent's level of e-readiness is moderate. It is an acceptable level of e-readiness considering that online education in Morocco is still in its early stages and students still have many things to learn about effective online education.

Table 8: the overall mean score of the likert-scale

	N	Minimum	Maximum	Mean	Std. Deviation

overall mean score	114	1,00	5,00	3,6260	,70006
Valid N (listwise)	114				

Question 2: Does gender affect e-readiness?

Gender is an important variable in the study of e-readiness. Gender differences have various manifestations in preferences, attitudes ..etc. scholars have studied the relationship between e-readiness and gender to see if there is any effect or differences between gender in e-readiness. Rasouli et al (2016) found no significant differences between male and female students' levels of e-readiness. Scherer & Siddiq (2015) studied the gender differences in Computer self-efficacy (CSE) of 1208 secondary school teacher 36,5 are male and 63,5 are female. Int their model, CSE is divided into three areas: Self-efficacy in basic operational skills, advanced operational and collaborative skills and using computers for instructional purposes. They found significant differences in Self-efficacy in basic operational skills, advanced operational and collaborative skills in favor of male participants while female participants excel in using computers for instructional purposes. Redempta & Elizabith (2012) studied gender difference in e-readiness in Kenya. They found that technology acceptance is higher in male participants. The authors, hence, confirm that gender does not affect e-readiness per-se but there are other factors or inequalities that create this difference. Similarly, scherer et al (2021) found gender differences in e-readiness levels of 731 higher education teachers. Male and female teachers scored differently across the three levels of e-readiness for online teaching and learning (OTL). The researchers claim that these gender differences are due to measurement bias. They explain that in most cases teachers' experience with technology and OTL is the main reason for digital gender divide.

In this study however, we ran an analogy of mean scores of Male and Female students (see table 9). We found no significant difference between male and female participants. They all show a moderate level of e-readiness. This is pretty normal considering the fact that, in our sample (engineering students), there is no gender divide or inequalities in technology accessibility or training. All students, male and female, have had their own smartphones and computers years ago. They are "digital connoisseurs" (Goh &Abdul- Wahab, 2020) with a high experience in dealing with technology. In fact, today's students have always been surrounded by technological gadget, no wonder that, they are sometimes more knowledgeable than their teachers in technology-related matters

Notably, the mean scores of both genders dropped down at item "I manage time well" Male= 2,89/ Female= 2,71, and "I am not distracted by other online activities when learning

online (instant messages, Internet surfing)" Male=2,69/ Female= 2,38. Honestly, it is a bit challenging to maintain focus online. Some students developed the habit of checking their phones every ten minutes or even less. They are always online so their phones keep receiving messages which is a constant source of distraction.

Table 9: the mean scores of Male and female participants

	Gender								
	Male			female			Total		
	Mean	N	Median	Mean	N	Median	Mean	N	Median
I feel confident in performing the basic functions of Microsoft Office programs (Word, Excel, PowerPoint)]	3,98	64	4,00	3,88	48	4,00	3,94	112	4,00
I feel confident in my knowledge and skills of how to manage software for online learning (googlemeet, Zoom, Microsoft Office).	3,75	64	4,00	3,90	48	4,00	3,81	112	4,00
I feel confident in using the Internet (Google, Yahoo) to find or gather information for online learning.	4,09	64	4,00	4,21	48	4,00	4,14	112	4,00
I carry out my own study plan.	3,87	61	4,00	3,57	49	4,00	3,74	110	4,00
I seek assistance when facing learning problems.	3,39	64	4,00	3,37	49	3,00	3,38	113	4,00
I manage time well.	2,89	64	3,00	2,71	48	3,00	2,81	112	3,00
I set up my learning goals	3,52	64	4,00	3,51	49	4,00	3,51	113	4,00
I have higher expectations for my learning performance.	3,66	64	4,00	3,63	48	4,00	3,64	112	4,00
I can direct my own learning progress.	3,72	64	4,00	3,52	48	4,00	3,63	112	4,00
I am not distracted by other online activities when learning online (instant messages, Internet surfing).	2,69	64	2,00	2,38	48	2,00	2,55	112	2,00
I repeated the online instructional materials on the basis of my needs.	3,46	61	4,00	3,28	47	3,00	3,38	108	3,00
I am open to new ideas	4,19	64	4,00	4,12	49	4,00	4,16	113	4,00
I have motivation to learn.	4,00	64	4,00	4,08	49	4,00	4,04	113	4,00
I improve from my mistakes.	3,95	64	4,00	4,14	49	4,00	4,04	113	4,00
I like to share my ideas with others.	3,89	64	4,00	4,04	49	4,00	3,96	113	4,00

I feel confident in using online tools (email, discussion) to effectively communicate with others.	3,81	64	4,00	3,84	49	4,00	3,82	113	4,00
I feel confident in expressing myself (emotions and humor) through text.	3,52	64	4,00	3,53	49	4,00	3,52	113	4,00
I feel confident in posting questions in online discussions.	3,29	63	3,00	3,02	48	3,00	3,17	111	3,00

Question 3: Is there any correlation between grade level and e-readiness?

Grade level or experience is another important variable in the study of e-readiness. Most of the studies that investigated the correlation between experience and e-readiness level focused on teachers. Still, it is a relevant quest since teachers' experience is equivalent to students' level.

Scholars (Downing & Dyment, 2013; Hung, 2016; Martin, Budhrani, & Wang, 2019; Scherer et al., 2021) have found that e-readiness and experience are either positively or negatively correlated. Scherer et al (2021) found a positive correlation between online teaching and learning OTL experience and two readiness constructs: teachers' self-efficacy and perceived online teaching presence (up to r= 0,22). Conversely, Martin, wang, et al. (2019) observed a negative correlation between OTL experience and self-efficacy in technology use (r= -0,16). Scherer et al (2023) note that the correlation between experience and e-readiness is not necessarily either positive or negative. "the possibility of a curvilinear rather than linear experience-readiness relationship could explain the divergent findings in the field of OTL" (P. 3).

In our study, however, we are interested in the correlation between students' Grade and their level of e-readiness. To do so, we ran a spearman correlation test (see table 10) that will help us check if e-readiness is affected by students' level.

Table 10: correlation between students' grade and level of e-readiness

			Grade level	over all mean score
Spearman's rho	Grade level	Correlation Coefficient	1,000	,161

		Sig. (2-tailed)	.	,088
		N	115	114
	over all mean score	Correlation Coefficient	,161	1,000
		Sig. (2-tailed)	,088	.
		N	114	114

The correlation test shows that there is a small correlation between students' grade and e-readiness, r= .161, n= 114, p=0,088. In other words, students' e-readiness is not affected by their Grade level. Indeed, students' competence in using technology is nurtured, in addition to training, by technology access, attitude toward online learning, motivation to learn, and passion for technology. All of these factors are personal and not related to his/her school level.

6. CONCLUSION AND IMPLICATIONS

This research is based on the premise that e-readiness is an important quality of today's students. in a fast-changing world, students should be ready to benefit from the various advantages of technology. Evidently, making the shift from offline to online education is a difficult task, however, if students develop the pre-requisite skills, they can easily adapt to the online environment.

Our findings uncovered that students at Mohammedia school of Engineers (EMI)-Rabat have a moderate level of e-readiness. As stated earlier, it is an acceptable level considering the fact that the Moroccan experience with online teaching/learning is still in the infancy stage. teachers and students, however, still need to learn a lot of things to implement online learning effectively. The findings also show that students present a fertile environment for online education to flourish. They have exhibited the mastery of basic skills (using Microsoft software and searching online) as well as motivation to learn online. Yet, students should improve their time-management and self-control to deal with online distractions.

Gender divide is diminishing as more gender equality takes place. Both genders exhibited approximately the same level of e-readiness. They have had the same technology-access, training and opportunities to learn online. Similarly, grade level is not an affective factor in students' e-readiness. The finding show no significant correlation between students grade and their e-readiness level. It seems that regardless of their school grade, students have approximately the same e-readiness level. E-readiness is nurtured by students' eagerness to

master technology skills. It is not surprising to find a first year students outclass a third year or even his/her teachers in technology-related matters.

Practically speaking, education officials should:

1. Seize the positive attitude and energy of students to gradually present online education and form a blended model of learning that builds on the advantages of both offline/online education.
2. Train students on time management and self-control.
3. Develop a suitable infrastructure for online education

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