

On the Relationship of Moroccan Students' E-Learning Readiness, Perceived Attitudes, and Independent E-Learning during Covid-19 Pandemic Times: a Correlational Study

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The current reality of Covid-19 pandemic has strengthened existing disorderly tendencies and crises in higher education. These include digital transformation where online learning and teaching or a combination of the two have become the rule not the exception. This study therefore aims at examining the challenges that Ibn Tofail University (ITU) students have faced during the Covid-19 lockdown with a particular focus on exploring their e-readiness to get adapted to the sudden disruption created by universities transition to e-learning and its correlation with perceived attitudes, and independent e-readiness. One hundred and twenty-six respondents reacted to a semi-structured self-administered questionnaire adapted from literature and which contains sections about e-readiness, perceived attitudes towards e-learning, and independent e-learning. Spearman rank-order correlation tests were performed to assess the correlations between different factors. The results of the study showed that the three main variables: e-readiness, perceived attitudes towards e-learning, and independent e-learning correlate positively and strongly with each other. These results suggest that the level of satisfaction with the model of teaching and learning provided under emergency using technology has enhanced students' e-readiness, attitudes towards e-learning, and independent e-learning. In conclusion, the students are ready for e-Learning despite the modest ICT infrastructure and the stressful circumstances related to the Covid-19 pandemic.

E-readiness; perceived attitudes; independent e-learning; Covid-19 Pandemic.

Introduction

No deny that the fast-increasing technology use has changed how knowledge is being disseminated and how people started perceiving life and education is no exception. In some ways, education does not seem much the same as it has been for many years. The insinuation is to the impact of the Covid-19 pandemic crisis on education. Covid-19

pandemic crisis has reshuffled roles and vocations (Carlson 2020; Daniel 2020). The shift in roles, with technology as its firewood, has touched both the role of students as well as that of the teachers. This upheaval obliged schools and universities to adopt the most sophisticated communication technologies as modern ways of imparting knowledge.

Visvizi, Lytras, and Aljohani (2021) stated in this vein that this disruption is provoked by several advantages offered by the affordances of independent e-learning: flexibility of time and space, increase in the quality of learning material, flexible management, possibility of e-assessment, and the increase in costs. The learners are no more constrained by time and place as they can access learning opportunities at any time and in any place. Additionally, material/OERs are of higher quality and flexibility in the sense that they are available and can be scrutinized through web mechanisms as well as against the 21st century higher order skills which the new millennials are supposed to possess. The possibility of e-assessment is also guaranteed through Web-specific tools. E-testing software can be used to assess theoretical knowledge and e-portfolios or simulation software for practical skills (Lazarinis, Green, and Pearson, 2010). Finally, Covid-19 pandemic crisis was a lucrative opportunity for telecommunication operators as well as online trainings agencies. Thus, technology and learning innovation have become decisive determinants shaping education in the Covid-19 pandemic.

1.1. Statement of the Problem

The scale of the continuing novel COVID-19 pandemic is unparalleled in the 21st century as few of the educational institutions worldwide were well prepared for this sudden, disruptive move. A lot of hasty decisions were taken, and uncalculated improvisations were made as academics and students fight to make use of online learning. Starting then from this conviction and to fill the gap of research, the present paper therefore aims at examining the challenges that the students of the school of Languages, Letters, and Arts at Ibn Tofail University (ITU), Kénitra Morocco have faced during the Covid-19 lockdown with a particular focus on exploring their e-readiness to get adapted to the sudden disruption created by the university transition to e-learning and its correlation with perceived attitudes, and independent e-learning.

1.2. Research Questions and Hypotheses

In accordance with the previously stated objectives and consistent with related literature, this study tries to answer the following research questions and confirm or disconfirm subsequent research hypotheses:

RQ1: To what extent does e-readiness relate to students' independent e-learning?

RQ2: Do learners' perceived attitudes have any association with their independent e-learning?

RQ₃: Is there any significant relationship between learners' e-readiness and their perceived attitudes?

RH₁: Students' perceived attitudes is associated with their e-learning readiness.

RH₂: There is a significant relationship between Students' independent e-learning and their e-learning readiness.

RH₃: Students' independent e-learning correlates with their perceived attitudes.

Review of the Literature

Covid-19 pandemic first appeared in the city of Wuhan, China, December 2020. The fast spread of this contagious disease worldwide triggered a global lockdown, social as well as physical distancing measures, and total restrictions on face-to-face teaching and learning (Kapasia, Paul, Roy, Saha, Zaveri, Mallick, Barman, Das, and Chouhan, 2020). Millions of school-going learners have been banned from attending their usual courses and forced into accepting the reality of the virtual. Educational institutions, and tertiary level ones are no exception, found themselves under the obligation to take unprecedented measures to combat such an epidemic. They started instructing teachers into a variety of ways of teaching using various online learning platforms, such as Google Meet, Microsoft Teams, Zoom, to name but a few. The digital revolution in the outbreak of this pandemic has caused radical shifts in higher education systems through online lectures, teleconferencing, OERs use, online examination and assessment, and interaction and affiliation with different CoPs across the virtual globe. This has had an effect on learners in terms of readiness to adopt new technology that supports independent e-learning as well as perceived attitudes towards this disruption of the learning process (Madhusudan 2021).

2.1. E-learning Readiness

E-readiness requires the availability of essential ICT infrastructure and mainly refers to staff's level of capability to use new technological material in various learning environment (Watkins and Triner, 2004 as cited in Elsaadani and Alzahrani, 2018). It similarly "points to critical factors that should be considered in order to get ready for e-learning" (Khan 2005, p.24). Since online learning is Internet-based, the flexibility as well as the distributed nature of the interactivity of the Academic electronic communities of practice (AeCoPs') learning environments are decisive in framing the structure, interaction and learners' autonomy. However, e-readiness stands out among these factors regarding independent e-learning (Moore and Kearsley, 2012). The motivating reason herein is the inability of the developing countries, Morocco is no exception, to detect the major factors behind the minimal adoption of e-learning, and the initial step is to gauge the e-readiness for e-learning from the students' perspective. Investigating the extent to which students are ready for e-learning, especially under the lockdown caused by

COVID-19, shall help in the planning of ICTs resources in higher education institutions, and in discovering strategies students use and fostering those compatible with the new style as well as help boost learning in an effective and efficient way (Park, Roman, Lee, and Chung, 2009). In this vein, and according to Machado (2007), the e-readiness measurement is done by basically assessing the progress of interconnected attributes with indicators that enable in assessing the process or the model.

A plethora of authors studied e-learning readiness in different domains and the focus was more on organizational and educational institutions. In this sense, Akaslan and Law (2011), after having applied their e-learning readiness survey to teachers working in the higher education institutes where they found that the academic staff had confidence and positive attitudes towards e-learning, moved to the study of students' e-readiness. The findings showed that the students had positive attitudes and ready for the e-learning experience; however, they needed more training in e-learning related issues.

Additionally, the study of faculty e-readiness has been through many factors such as "technical skills, access to technology, motivation, attitude, personal characteristics, self-directed learning, online skills, online communication, learner control, and time management" (Gulbahar, 2012; Ilhan & Cetin, 2013; Radiman and Abdullah, 2010; Vinh, 2010; Robert, 2011 as referenced in Elsaadani and Alzahrani, 2018, p.3). Chapnick (2001) also proposed a model of eight types of e-readiness to assess e-learning readiness of organizations, i.e., psychological, sociological, environmental, human resources, financial, logical, equipment, and content (Gaol, Kardy, Taylor, and Li, 2014), whereas Welsh (2002) discusses only three basic types of e-readiness: financial, structural, and cultural (Elsaadani and Alzahrani, 2018). Also, Aydin and Tasci (2005 as cited in Mutiaradevi 2009) developed an E-Learning Readiness Survey (ELRS) to assess how managers perceive their organization's readiness for e-learning in Turkey based on these indices: people; self-development; technology; and innovation.

E-Learning readiness assessment is therefore salient for institutions that target the implementation of e-Learning and COVID-19 could have been the instigator. E-learning readiness in the-context of this study is the state of readiness of students of the faculty of Languages, Letters, and Arts Ibn Tofail University toward the use of internet-technologies to enhance their learning. Despite the advancement the Moroccan higher education ministry has made lately, still with the surprise created by the pandemic and the disruption caused, students and teaching staff are still getting adapted given their differences insofar as the new learning and teaching initiatives advanced by the ministerial authorities are concerned. Therefore, conceptually, the focus of this study is on these e-readiness elements: self-direction, learning preferences, study habits, technology skills, and computer equipment capabilities (as cited in Cullen and Harris, 2010).

2.2 Independent e-learning

“Most learning has always been independent but not most education” (Horton and Horton, 2003). Most students had the habit of sticking with the formal regulations of their schools in a way that shows how dependent they are on the formal content disseminated to them; however, they still have that hidden side of being non-conformist and non-traditional in amassing that knowledge that is distributed on the net in a connected and connectivist way emancipating them from the limitations of formal education. In this vein, independent e-learning has been approached in diverse ways. It is defined as a process and a philosophy of education where the learner has at his disposal various digital devices that help him/her to develop self-learning, self-direct learning, self-regulated learning, self-determined learning, or autonomous learning (Saks and Leijen, 2014). At this point, it seems that independent e-learning is emancipating both non-traditional, or non-institutional learners as Horton and Horton (2003) call them, who still long to formal setting of learning using technology. Therefore, independent e-learning is a golden opportunity for those learners who prefer to do their learning away from the loving embraces of schools. Moreover, a less specific definition is given by Clark and Mayer (2011) who define independent e-learning as “instruction delivered on a digital device such as a computer or mobile device that is intended to support learning” (8). The focus here is not only on the learning output independent e-learning process brings about, but on its features. Learners being able to store information using digital devices, to decide on content relevance, to use media content to deliver content, to use instructional methods for feedback as well as for learning promotion through both synchronous and asynchronous modes, and to build knowledge and skills decisive in attaining learning goals. An almost all-inclusive statement is delivered by Simon and Kollarova (2019 as referenced in Lehmann, Lugossy, Nikolov, and Szabó, 2019) when they tersely stated that:

e-learning concerns learning situations where participants are connected via a network to which they all have access and where the construction of knowledge is supported by ICT technologies and the learning environments are either developed or adapted to engage the learners in their own learning beyond the limits of face-to-face sessions. (pp.195-196)

For the above scholars, e-learning is connectivist in nature where distributed knowledge is produced by nodes of all kinds that are available and accessible in the network, which attests to its being independent and autonomous.

Noteworthy here is the nature of e-learning. It is a form of online learning like Internet learning, distributed learning, networked learning, tele-learning and telematics distributed learning. Because of not having a uniform definition of e-learning, authors agree that it implies that “the learner is at a distance from the tutor or instructor, that the learner uses some form of technology (usually a computer) to access the learning material” (Oye, Mazleena, and Iahad, 2012, p.48), and that this learner is given some support as part of his/her autonomy. This latter includes “the ability not only to organize one’s own learning, but also to form one’s own judgements, to decide on a point of view, and to be able to defend one’s position in a given area of knowledge” (Boud 1988, p.11). This aspect of autonomy, of course different from heteronomy and anomy, sheds light on how e-learning connects with the notion of learner independence. E-learning therefore is not only about formal instruction using technology means, but also about learning that is tailored to individual needs bearing in mind their non-conformist tendency and autonomy in doing learning and teaching their ways.

2.2.1. Types of E-Learning

While e-learning varies across a large spectrum, in overall e-learning course is likely to fall into one of the following three types: Courseware/Text driven, Blended Learning, e- Communities, and Knowledge Management systems.

2.2.1.1. Courseware

Most learning content discussion in e-learning considers courseware as multimodal educational courses. They are seen as “educational material organized as courses and typically distributed as PDF files, as well as smaller chunks of learning, often referred to as learning objects” where the “content may involve websites, simulations, text files, images, sound or videos in digital format” (OECD 2007, p.10). Moreover, this diverse multimodal and semiotic material uses various media and are uploaded to a networked environment where distributed knowledge is easily accessed given their nature of being only reusable learning objects. This access is guaranteed through various learning management systems (LMS) that still lack innovative ways that arrange and sustain the overflow of information in modern imposed online classroom environments (Wilkens, Buhler, and Bosse, 2006 as cited in Antona and Tephaniadis, 2006).

2.2.1.2. Blended Learning

According to Ololube (2013, p.38), blended learning is used to describe “the combination of traditional off-line methods of learning” with online learning or Internet-based methods. It is therefore a type of e-learning where various delivery modes, computer-based and classroom-based, that are fashioned after the special needs of learners having their learning not exclusively online or on-site are used. The focus is after all of a learning that is done in class but making the most of the online learning. Bersin

(2004) joins Ololube (2013) with an all-inclusive and succinct definition of blended learning as a form of e-learning. He focused on the fact that the combination of these delivery modes and methods, the traditional-led training and electronic formats, are done with the objective “to create an optimum training program for a specific audience” (xv). The historical contextualization of such reasoning can be traced back to the era when a lot of content was being uploaded to the web in forms of Open educational resources or reusable learning objects before them.

2.2.1.3. Academic e-communities of practice (AeCoPs)

Electronic communities of practice (eCoPs) can be defined as an informal group of networked people who share common interests, prove some belongingness and membership to the network, share and actively cocreate knowledge which is disseminated when needed (Louis 2005 as referenced in Coakes and Clarke, 2005). Lave and Wenger (1991 as cited in Mallon 2020, p.34) corroborate the definition above when they tersely stated that eCoPs are seen as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”. These scholars stress the fact that eCoPs are very common in academia and that they centrally focus on pedagogical growth and learning design. Because of the fact that the members of these academic electronic communities of practice (AeCoPs) are connectivistically globally networked, they cannot help dialoguing, sharing, and building distributed knowledge for everyone in need.

Furthermore, Wenger (1998), AeCoPs coherence entails three significant dimensions: mutual engagement (engaging in community-raising feeling); joint enterprise (accountability measures that are jointly agreed upon); and shared repertoire (any shared and cocreated knowledge characterizing the lifecycle of the AeCoP) (as referenced in Bueger and Gadinger, 2018).

2.2.1.4. Knowledge Management

In the context of education, the concept of e-learning encompasses creating and co-creating knowledge for the active adherents of the connected community. This operation entails management of this distributed knowledge through technology that has the potential to provide improved learning opportunities for every node on the net. Therefore, the reflections on knowledge management and economy have become central to the process of creating learning societies. For Liebowitz and Frank (2016), even though knowledge management is an old term that dates back as far as the early 1980’s, it stills deals with the leveraging of the tangible and intangible knowledge internally and externally through enabled technologies, web 2.0 and social networking. The proof for the synergetic relationship between e-learning and knowledge management is manifested in the increasing number of online degrees delivered by corporate universities. The relationship is also quite evident in dealing with “knowledge capture, sharing, application,

and potentially knowledge generation” (Liebowitz and Frank, 2016, p. 4). These operations are characteristic of AeCoPs essence and existence. Maier’s (2007) standpoint is no exception as he stressed the fact that knowledge management systems value the combination and integration of both the implicit and the explicit using collaborative technological tools allowing teams and communities of people to benefit from e-learning functionalities integrated to these systems.

Methodology

3.1. Research paradigm

In this research, quantitative correlational design methods will test the association between existing students’ e-readiness, perceived attitudes, and independent e-learning as covariables. Specifically, a Spearman-rank order correlation coefficient will be used as a non-parametric version of the Pearson product-moment correlation test. *Spearman’s Rho* is used to examine the strength and direction of the association between the actual raw scores of the covariables, where both are tested on an ordinal level of measurement (Abu-Bader 2011). The Pearson’s product-moment correlation coefficient and *Spearman’s Rho* coefficient look alike in that the value of (e.g., r/Rho) shows the direction of the correlation that ranges between -1 and +1, and its squared value (e.g., r^2/Rho^2) indicates the strength of the relationship between two variables—proportions of the shared variance (Glenberg and Andrzejewski, 2007). This correlation analysis therefore attempts to measure the association between the main variable of the study, independent e-learning and the other two variables related to existing students’ e-readiness and perceived attitudes.

3.2. Sample and Sampling Procedure

The choice of a research design is significant in a broad area of inquiry such as independent e-learning. Therefore, the appropriateness of research method chosen relates to design that offers the advantageous ground to answer the research questions set for the practical side of the present study. In this vein, the correlation analysis requires the most stringent sample size and for this reason the researcher had recourse to G*Power software. For a two-tailed test, using an effect size of .50, an alpha of .05, and a power of .95, the sample size was calculated to be 46 participants (Cohen 1988). Following Pareto principle which is a standard requirement for efficiency (80/20), explanatory power should not be lower than 80% and anything below that is a matter of committing Type I error (as cited in Rangan 2018). Consequently, to achieve empirical validity, a minimum sample size of 46 participants is required.

The sampling frame is the target population for the research study and the study sample is a subgroup that represents the area of research interest; independent e-learning (Creswell 2005). The target population is all the undergraduate, graduate and

postgraduate students at the School of languages, Letters, and Arts of Ibn Tofail University, Kénitra. The full contact, initial and complete, with the participants was through an online survey that was emailed to these students email boxes. The sample expected is non-probabilistic, both judgement and purposive. It is judgement in the sense that the sampler/researcher judges the sample to possess the necessary variables related to the problem under study. It is also purposive as the sampler/researcher thinks that even though the sample units are not representative of the whole population, they have the capacity to offer contribution that is desired (Rao 2004).

3.3. Data Collection Tools

Despite the risk of using the non-probabilistic approach that results in the absence of the possibility to generalize findings to other similar settings and target population, this method of sampling helps probe deeper into particularities of the variables, which is guaranteed using a structured survey research questionnaire. Thus, for the purposes of this study, the researcher uses an online questionnaire survey covering five sections each of which measures both online learning and e-readiness, with a sixth section measuring perceived attitudes towards independent e-learning. The questions and items are scaled ordinal-polytomous close-ended ones with ordered options for the participants to choose from.

The dataset used in this paper is based on data obtained from the structured questionnaire survey conducted online. The survey was conducted online over the 15 days, April 19 through May 3, 2021. Responses started being collected the next day, and 126 questionnaires were obtained with a response rate of 69.23% (126 questionnaires obtained out of 182 potential participants).

The studies that used e-readiness scales and perceptions of independent e-learning scales were examined (Napitupulu, Adiyarta, Abdullah, and Murtiningsih, 2019). The online learning readiness Scale for Online Learning developed by Cullen and Harris (2010) was preferred since it is a more current, sufficiently short measurement tool including three dimensions with seven subscales of online learning. As to the independent e-learning scale, it was taken from Rowell's (2015) unpublished doctoral dissertation and perceived attitudes scales were adopted from Berteau's (2009) study.

Data Analysis and Description

The Statistical Package for the Social Sciences (SPSS, Version 22) was used to analyze the data gleaned from the online structured survey questionnaire. The researcher made sure that the statistical analysis translates the objectives of the study and helps answer the research questions and confirm or disconfirm the research hypotheses. Additionally, to the best knowledge of the researcher, this is the first time a study tackles e-learning and related variables in times such as COVID-19 pandemic. A five-section

survey questionnaire has been devised to study the association of the variables under study, independent e-learning, e-readiness, and perceived attitudes.

To measure the e-learning readiness, perceived attitudes and independent e-learning of our sample each dimension of the survey used different sets of questions/items. Furthermore, to confirm the dimensionality of the constructs and test for the reliability of the scales, both a Cronbach's alpha and an established convention of factor analysis (the Principal Component Analysis) with equamax rotation (KMO and Bartlett's Test), were run on data collected from a sample size of 126 students were used. The following Cronbach alpha coefficients were calculated:

Table 1: *Coefficient alpha estimates for the study variables (e-learning readiness, independent e-learning, and Perceived Attitudes)*

Constructs of the study	Cronbach alpha coefficients
<i>E-learning readiness</i>	
1. Self-directness	.877
2. Learning Preferences	.762
3. Study Habit	.836
4. Technological Skills	.825
5. Computer Equipment Capabilities	.791
The Total Scale (<i>E-learning readiness</i>)	.839
<i>Independent e-learning</i>	
1. Course Quality Dimension	.812
2. OERs and Learning Autonomy Dimension	.723
3. Affective Learning Dimension	.845
4. Cognitive Learning Dimension	.773
5. Value of OERs Dimension	.776
6. Quality of Learning Dimension	.884
7. Motivation to Learn Dimension	.768
The Total Scale (<i>Independent e-learning</i>)	.803
<i>E-learning Perceived Attitudes</i>	
1. E-learning offers the possibility to efficiently manage your time.	.875
2. E-learning is not efficient as a teaching method	.785
3. E-learning is a learning environment which needs advanced technical knowledge a pc use.	.811
4. E-learning assures schedule flexibility.	.834
5. E-learning reduces students' educational costs.	.887
The Total Scale (<i>E-learning Perceived Attitudes</i>)	.838

A five-dimension scale of both e-learning readiness and perceived attitudes constructs, and a seven-dimension independent e-learning scale showed therefore a coefficient alpha estimates of internal consistency of (.839, .838 and .803 respectively in table 1 above) suggesting that the items have relatively high and good internal consistency, which indicates also that the measurement design is highly credible. Noteworthy is that a reliability coefficient of .70 or higher is considered “acceptable” in most social science research situations (Nunnally 1978 as reported in Fazlagić 2017).

Additionally, the Cronbach’s alpha values obtained assume unidimensionality of the questions and items contained in the tool. That is, they are measuring evident latent variables or dimensions which are independent e-learning, perceived attitudes, and e-readiness. One can conclude therefore that the correlation test results are meaningful under such conditions.

Table 2: *KMO and Bartlett's test for the two constructs (e-learning readiness, independent e-learning and e-learning perceived attitudes respectively)*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.987
Bartlett's test Sphericity (e-learning readiness)	Approx. Chi-square	3090.725
	Df	436
	Sig.	.000
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.806
Bartlett's test Sphericity (Independent e-learning)	Approx. Chi-square	2409.623
	Df	512
	Sig.	.000
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.912
Bartlett's test Sphericity (e-learning Perceived Attitudes)	Approx. Chi-square	5432.614
	Df	489
	Sig.	.000

Furthermore, in the present study, table 2 above illustrates two statistics used of for examining the strength of variables relationships as part of deciding whether principal component analysis is appropriate or not. The Bartlett’s Test of Sphericity is generally used to evaluate whether a correlation matrix is appropriate for PCA by testing the hypothesis that the matrix is an identity matrix, a matrix in which all coefficients not in the diagonal are zeros (Munro 2005). For our example, the analysis revealed that the probability reported is .000 (for the three scales) suggesting a low probability that the matrix hypothesis is rejected and that PCA is suitable for this study as a procedure. Moreover, as to the Kaiser-Meyer-Olkin (KMO), the statistics obtained are (.987, .806 and .912 correspondingly) proving that KMO measure of sampling adequacy is appropriate for this study as Munro (2005) suggests that “If a KMO measure in the .80s or .90s is achieved, this supports the use of factor analysis for the data” (336).

4.1. Descriptive Statistics Analysis of the Data

Table 3: *E-learning readiness Scale*

	1. Self-directness Dimension	2. Learning Preferences Dimension	3. Study Habits	4. Technology Skills Dimension	5. Computer Equipement Capabilities Dimension
N	126	126	126	126	126
Valid	0	0	0	0	0
	3.857	3.730	3.638	3.952	4.000
Missing	.9133	.8837	.7997	.8506	1.0318
Mean	243.0	235.0	232.0	249.0	252.0
Std. Deviation					
Sum					

Noteworthy here is that the e-learning readiness survey questionnaire contains five dimensions, each of which contains a number of items/questions. These dimensions are: self-directness, learning preferences, study habits, technology skills, and computer equipment capabilities (as reported in Cullen and Harris, 2010). The five dimensions means presented in Table 3 above. The total mean of all the dimensions items/questions was 3.63 or greater and the highest rated e-learning readiness dimension, computer equipment capabilities (M=4.00) indicated that the students are aware of the computing requirements of independent e-learning.

Table 4: *Independent e-learning Scale*

	1. Course Quality Dimension	2. OERs and Learning Autonomy Dimension	3. Affective Learning Dimension	4. Cognitive Learning Dimension	5. Value of OERs Dimension	6. Quality of Learning Dimension	7. Motivation to Learn Dimension
N	126	126	126	126	126	126	126
Valid	0	0	0	0	0	0	0
	4.270	3.857	3.257	3.968	3.778	3.475	3.998
Missing	.9017	1.0451	.9480	.8793	1.1701	1.2341	1.5678
Mean	269.0	243.0	233.0	250.0	258.0	234.0	238.0
Std. Deviation							
Sum							

As to the independent e-learning scale, it comprises seven dimensions each of which also contains various items and questions. Among these dimensions, OERs and learning autonomy, affective learning, cognitive learning, value of OERs, quality of learning, motivation to learn, and course quality (as cited in Rowell 2015). This last dimension scored higher with a high mean of ($M=4.27$). This score suggests that the students are highly satisfied with the e-learning course quality especially that the different electronic platforms available are used and their affordances are many. The total scale mean was ($M=3.79$).

Table 5: *E-learning Perceived Attitudes scale*

	1. E-learning offers the possibility to efficiently manage your time.	2. E-learning is efficient as a teaching method	3. E-learning is a learning environment that needs little advanced technical knowledge of a pc use.	4. E-learning assures schedule flexibility	5. E-learning reduces students' educational costs.
N	126	126	126	126	126
Valid	0	0	0	0	0
	3.712	2.014	3.981	3.875	4.090
Missing	.7654	.7765	.6971	.8213	1.0318
Mean	310.0	219.0	215.0	225.0	261.0
Std. Deviation					
Sum					

Insofar as the perceived attitudes scale is concerned, it revolves around five dimensions (as referenced in Bereta 2009) (see table 5 above). The e-learning being cost-effective dimension received the highest mean score ($M=4.090$). This mean indicates that the students hold positive attitudes towards e-learning as they believe that e-learning helps to save time, is effective a s teaching tool, assures schedule flexibility, is cost-effective, and does not require students to be a computer savvy.

4.2. Inferential Statistics Analysis of the Data

Table 6: *Correlation of E-learning Readiness Dimension and Independent E-Learning Dimension*

			<i>Independent E-Learning Dimension</i>	<i>E-learning Readiness Dimension</i>
Spearman's rho	<i>Independent E-Learning Dimension</i>	Correlation Coefficient	1,000	,713
		Sig. (2-tailed)	.	,000
		N	126	126
	<i>E-learning Readiness Dimension</i>	Correlation Coefficient	,713	1,000
		Sig. (2-tailed)	,000	.
		N	126	126

The Spearman rank-order correlation uses ranks of assumptions about the distributions of the two variables as opposed to the Pearson correlation coefficient that uses continuous-level data (interval or ratio) and requires linearity, heteroscedasticity, and normality as criteria to be met (King and Minium, 2007). On the contrary, since the Spearman correlation does not assume that the variables are normally distributed and therefore deemed appropriate for our case (King and Eckersley, 2019).

The correlation matrix generated above (table 6) is the result of running a Spearman rank-order correlation to determine the relationship between of e-learning readiness dimension and independent e-learning dimension. The correlation between the two variables, with 126 respondents reacting to both dimensions, is statistically significant at ($Rho = .713, N=126, p = .000$). This indicates a strong positive correlation between e-learning readiness dimension and independent e-learning dimension. We could conclude from our 'two-tailed' prediction of the relationship therefore that it would be necessary to reject the null hypothesis that there is no association between the variables in favor of the research one at ($p = 0.00$).

Table 7: *Correlation of E-learning Readiness Dimension and Perceived Attitudes Dimension*

			<i>Independent E-Learning Dimension</i>	<i>E-learning Readiness Dimension</i>
Spearman's rho	<i>Perceived Attitudes Dimension</i>	Correlation Coefficient	1,000	,801
		Sig. (2-tailed)	.	,000
		N	126	126
	<i>E-learning Readiness Dimension</i>	Correlation Coefficient	,801	1,000
		Sig. (2-tailed)	,000	.
		N	126	126

A Spearman's rank-order correlation was also run to determine the association between e-learning readiness dimension and perceived attitudes dimension. There was a strong, positive correlation between the two covariables, which was statistically significant ($Rho = .801$, $N=126$, $p = .000$). Since the cut edge alpha is set at $\alpha = 0.05$ achieving a statistically significant, Spearman rank-order correlation means that we can safely conclude that there is less than 5% chance that the strength of the relationship we found (our ρ coefficient) happened by chance if the null hypothesis were true. The positive correlation coefficient obtained therefore indicates a positive relationship between the two variables (as values of one variable increase, values of the other variable also increase). That is, the more positive attitudes they hold, the more e-ready our sample is.

Table 8: *Correlation of Perceived Attitudes Dimension and Independent E-Learning Dimension*

			<i>Independent E-Learning Dimension</i>	<i>E-learning Readiness Dimension</i>
Spearman's rho	<i>Independent E-Learning Dimension</i>	Correlation Coefficient	1,000	,863
		Sig. (2-tailed)	.	,000
		N	126	126
	<i>Perceived Attitudes Dimension</i>	Correlation Coefficient	,863	1,000
		Sig. (2-tailed)	,000	.
		N	126	126

The Spearman correlation as a bivariate correlation is employed here to test for the strength as well as the direction of the monotonic relationship between the following covariables: perceived attitudes dimension and independent e-learning dimension. The value obtained for this correlation ($Rho=.863$, $N=126$, $p = .000$). Thus, the correlation is strong and significant at $p = .000$ and that we can safely conclude that this strong positive Spearman's correlation indicates that high ranks of perceived attitudes dimension tend to coincide with high ranks of independent e-learning dimension. That is, the more e-independent learners are our participants, the more positive attitudes they hold.

Data Interpretation and Discussion

The main purpose of the present study was to investigate the challenges Ibn Tofail university students, particularly students of the School of Languages, Letters, and Arts during the COVID-19 lockdown. The objective therefore is to explore our case study students' e-readiness as to how they adapt to the sudden disruption created by the university transition to e-learning and its correlation with perceived attitudes towards independent e-learning. Consent of the 126 participants making the sample of the study

was taken and their willingness to participate in the study was guaranteed. This study sets forth three research question and three research hypotheses consistent with the related literature (see Introduction).

To answer the already posed research questions and confirm or disconfirm also the research hypotheses, both descriptive and inferential statistics were utilized. The descriptive findings indicated the scores of all the e-learning readiness dimensions are above the total mean (see Table 3). This result interpreted suggests that the sample of this study is composed of individuals who are revealed to be self-directed, well organized, and prepared for the challenges of working independently as online learners. The answers also show that the participants are flexible in their learning preferences, confident in their ability to solve problems, and comfortable when working independently or collaborating with others. These attributes are proofs that they can adapt to the online-learning environment. Other qualities are also discovered. They are able to prioritize their work to meet deadlines, willing to take advantage of the support offered by others, and willing to dedicate the time required to successfully meet their learning goals. Each of these study skills will help them achieve the learning outcomes for their online course. As to the two final dimensions, technology skills and computer equipment capabilities, the sample of the study is found to be composed of confident computer users with the necessary skills to manage their computing environment, either personally or by seeking help from appropriate sources. Moreover, they seem to be aware that the diversification of technology tools as well as technical configurations are important so as to be able to keep up with the challenges independent e-learning opportunities offer as affordances.

As far as the second scale, independent e-learning scale, it contains seven dimensions among which there is course quality, motivation to learn, OERs and learning autonomy, cognitive learning, value of OERs, and quality of learning. The aggregate mean of this construct ($M=3.79$), indicated that the individuals taking part as a sample in the present study are autonomous learners as they are able take decisions as to their learning making full use of OERs available, and designing their course. Consequently, it is important to stress that while these independent e-learners are self-managed, self-monitored, self-directed, they ease themselves into consulting others help and cooperation, either peers or educators. Their personal knowledge construction is uncompromised.

Finally, the perceived attitudes of our sample towards e-learning seem to be highly positive. The participants assume that e-learning offers the possibility of being good and efficient time managers as they perceive of the technology affordances as enhancing factors that help make advantage of available open educational resources, schedule any activity or action plan with a reminder, and eventually respond back to their teachers as well as to their supervisor in no time and therefore maintain constant contact. Moreover, they deem e-learning a worthwhile means of teaching even though it is imposed as it caters for different pedagogical needs and learning styles. E-learning context is also seen as an environment that does not need much expertise in handling a machine given the fact

that the whole sample belong to the generation of millennials. Most of all is that they find themselves exempted from buying those expensive booklets and hence think that e-learning is cost-effective.

From an inferential statistics point of view, a Spearman rank-order correlation was adopted to check the validity of the research gap that assumes that there exists a positive and strong relationship between the three covariables, two at each time: independent e-learning of our participants, their e-learning readiness and their perceived attitudes. The monotonic association between the means of the three variables suggests that with 126 respondents reacting to both the questions and the dimensions, the relationship is statistically significant at ($Rho = .713; .833; .801, N=126, p = .000$ respectively). This strong positive relationship is indicative as the decision is taken as to accept the research hypotheses and say that independent e-learning of our participants correlates with their e-learning readiness, with their perceived attitudes, and that e-readiness and perceived attitudes are also interconnected. The more the sample is e-ready, the more independent it is in its e-learning, and that the more positive attitudes they prove, the more e-ready they are to adopt e-learning techniques. The research questions are answered and the alternative hypotheses are confirmed.

Conclusion

This study has demonstrated that the existing disorderly tendencies and crises provoked by Covid-19 pandemic in higher education influenced the way teaching and learning is handled. Independent e-learning has emerged as the sole pedagogic tool and its affordances were in favor of a paradigm shift, digital transformation, that fostered connectivist learning. The present study aimed at exploring the possible association between the e-readiness of participants of the study to get adapted to the sudden disruption created by universities transition to e-learning and their perceived attitudes, and independent e-learning.

The results of the first scale, the e-learning readiness scale, have confirmed that the highest rated e-learning readiness dimension ($M=4.00$) indicated that the students are aware of the computing requirements of independent e-learning. The scale mean ($M=3.19$) for the whole scale is suggestive of the participants' e-learning readiness to take e-learning courses as they feel self-directed to take responsibility for different decisions associated with their learning, transfer learning in terms of knowledge and technology study skills, diagnose their needs and formulate clear and attainable learning goals (Rothwell and Sensenig, 1999). As to the second construct ($M=3.79$) designated by the second scale, the independent e-learning scale, the eight dimensions it comprises have revealed that our sample is highly satisfied with and motivated to take an online course where they feel autonomous and ready to assume ramifications of their learning style. Additionally, the Spearman rank-order correlation run to examine the association between the main variable of the study, revealed the existence of a strong positive relationship that backs up the alternative hypothesis and

rejects that null hypothesis that there was no relationship whatsoever. Therefore, one can conclude safely that monotonically the more motivated students are in opting for e-learning opportunities, the more ready they are to take more online courses and more self-directed in the way they conduct learning.

The results demonstrated therefore that there is a significant link between independent e-learning and e-learning readiness of the sample chosen for the present study. The conclusions obtained are in line with some studies such as Kaur and Abas (2004); Kaymak-Demir and Horzum (2013); Piskurich (2003) which state that students e-learning engagement correlates with their e-readiness and their ability to manipulate multimedia technologies and learning resources to improve the quality of their learning. Additionally, all these scholars stress the salience of success as an element associated with online learning readiness (reported in Ergün and Kurnaz Adibatmaz, 2020). Always on the same line of reasoning, Demir and Yurdugül (2015) and Smith (2005) define readiness for e-learning and online learning in three aspects: (1) student preferences to communicate indirectly. (2) student beliefs in using electronic communication for learning and in particular, competence and confidence in Internet use and computer-mediated communication and (3) Self-directed learning. From this classification, it seems that e-readiness and independent e-learning ingredients are elements that always go hand in hand. The existence of one stipulates the existence of the other. Therefore, individuals having positive beliefs about electronic media and use, being confident in making most of the online affordances, and being self-directed cannot but be e-ready individuals (cited in Prihastiwi, Prastuti, and Eva, 2021). To back up this argument, So and Swatman (2006) believe that for the success of an e-learning program implementation, there is a need to acknowledge the importance of assessing readiness of teachers and learners to adapt this learning style; hence, the salience of connecting online e-learning and e-readiness.

As to the relationship between independent e-learning and perceived attitudes, a study conducted by Muhanna and Abu-Al-Sha'r (2009) and the results of which revealed that the learners had positive attitudes towards e-learning environment using mobiles offers support to the results obtained in the present study. The undergraduate students in this study had more favorable attitudes to mobile phone teaching and use than graduates. Another back up comes from Garcia-Penalvo, Conde-González, Forment and Casany (2011) who state that user attitudes influence not only the initial acceptance of IT, but also the future behavior regarding computer use. Therefore, learners' perceived attitudes towards technology heavily impact both participation and subsequent achievement in e-learning (Liaw 2002 as reported in Garcia-Penalvo et al., 2008). One more evidence is provided by Dong, Lin, Wang, Yang and Yu (2007) who adopted a Technology Acceptance Model (ATM) to examine the attitudes towards e-learning for different purposes. They came to the conclusion that attitudes and perceptions which students hold towards their learning experience are very decisive in the intentional usage of new ICT.

Kisanjara (2014) provides evidence to the study results as a positive perceived attitude about the learning experience in general and e-learning in particular is a substantial support for e-readiness beside factors such as the ability to work independently, have self-motivation, mature reading and writing skills, and a proactive approach to learning. However, less encouraging results were revealed by a study conducted by Ibrahim and Abu Samah (2002) where the respondents had only a moderate level of readiness and also a moderate level of attitude towards online learning.

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