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■ Original Article

Students perceptions of distance learning effectiveness among nursing students during the COVID-19 pandemic

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ABSTRACT

Background: During COVID-19, the majority of higher education institutions in Morocco adopted distance learning. In this sense, the High Institute of Nursing Professions and Health Techniques (ISPITS) used alternative teaching/learning methods to ensure continuity of studies in case of health crises.

Materials & methods: This is a quantitative cross-sectional study. A questionnaire survey was conducted among the students (n=109). The results were analyzed using statistical software Jamovi.

Results: We found that distance learning is not suitable for 67% of the students, distance learning does not allow learning more than presential learning for 75% of the participants, half of the students find this learning method difficult and 48% of the students specify a low level of satisfaction. Significant relationships were confirmed between satisfaction and level of study ($p=0.01$), as well as for the student's perception of e-learning ($p<0.001$).

Conclusions: The results seem legitimate given unexpected adoption of this training mode without any prior preparation.

Keywords: COVID-19, e-learning, ISPITS Tiznit, nursing student, satisfaction

INTRODUCTION

Following the example of the rest of the world, Morocco has proceeded to stop face-to-face studies in response to the declaration of a state of health emergency following the COVID-19 pandemic. In this sense, the High Institute of Nursing Professions and Health Techniques (ISPITS) in the Kingdom of Morocco has suspended courses and internships from March 16, 2020, and has set up online

teaching/learning alternatives to ensure the continuity of studies.

To compensate for this situation, the training continues despite the home confinement by other alternatives including distance learning for different levels and different options.

Indeed, like the majority of higher education institutions, ISPITS in Morocco should use e-learning systems and more

sophisticated measures to deliver education. Indeed, online courses and flipped classrooms may be a good way to maintain teaching services now and in the future when such outbreaks occur again. Training institutes could use modern technologies and innovations to provide quality education to their students.

This training has been introduced at the levels of these institutions in a brutal way and without any prior preparation for students, teachers, and pedagogical managers. Thus, this situation has been an enriching experience for the participants, especially the learners. Indeed, the quality of teaching has been debated for centuries and criticized by teachers and students [1].

Consequently, there is a need to explore the use of E-learning and to evaluate nursing students' satisfaction with this method. According to the literature review, the authors argue that it is important to explore the relationship between student satisfaction and e-learning [2].

In this context, the present work is part of the work on teaching practices and is situated in a descriptive and explanatory approach, which aims mainly to study and evaluate the use of this teaching method by exploring the satisfaction of the students. As well as determining the factors influencing this phenomenon.

METHODOLOGY

Based on a quantitative approach guided by a conceptual framework, this study is based on the questionnaire survey that was tested and validated before exploitation.

The questionnaire is designed and sent to students ($n=109$) who participated in distance learning courses at ISPITS of Tiznit in 2020. The reliability of the scale is verified by Cronbach's alpha coefficient (0.838).

The collected data were processed using Excel software and then analyzed using the statistical software Jamovi.

It is worth mentioning that respect for anonymity and self-determination are taken into consideration in our study, as well as the fact that all the respondents were contacted directly or by phone before starting the data collection, explaining to them the interest and the objective of the study.

RESULTS

The presentation of the results is devoted, firstly, to the characteristics of the participants and, secondly, to the inferential analysis relating to the study of the relationship

between a range of variables including the use of e-learning and student satisfaction.

Descriptive Statistics

Student characteristics

The majority of the students surveyed are female (61%), i.e., a sex ratio of 1.6. The average age is about 20 years with a standard deviation of 1.31. The distribution of students by the semester of the study reveals the following percentages 46%, 34%, and 20% for S2, S4, and S6, respectively. Students receiving a scholarship represent 75%. In terms of personal budget, 22% of the respondents do not exceed 200 dh/month and 63% declare a monthly budget inferior to 500 Dh. Regarding accommodation and type of housing, the participants were hosted by their parents (57%), and 30% rented (24% rented in groups and 6% individually). As for the place of residence, almost all the participants (90%) come from the cities of Tiznit (58%) and Taroudant (32%) with a proportion exceeding half of the participants residing in the urban perimeter (54%), nevertheless about a third of the students live in the rural world (32%).

The results of the study illustrate that almost all participants have internet coverage. Similarly, 91% connect at home during distance learning. Regarding the sources of connection during e-learning, the students are divided into two groups; half of them connect via recharges (53%) and the other participants connect via a Wi-Fi network (47%). As for the equipment used by the participants, the majority (94%) said they used their smartphones during ADT and half said they used their laptops.

Concerning the cost of internet recharging, 56% of the students spend between 100 Dh and 600 Dh per month. And more than a quarter of them spend an amount of money equal to or more than 200 Dh per month.

Perception of distance learning

About two-thirds of the participants agree that face-to-face training is more suitable than distance learning, while those who disagree and disagree do not exceed 8%. Similarly, 71% of the students were unanimous that face-to-face training is more accessible than distance learning. In addition, half of the participants (38% strongly agree and 22% somewhat agree) in this study agree that distance learning allows for a different kind of learning.

Similarly, a large proportion (91%) of students said that face-to-face training often provides contact time with peers. Moreover, three-quarters (neither agree nor disagree) of the participants deny that distance learning does not allow for

more learning than face-to-face training. However, half of the respondents perceive that learning is not easy in distance learning and almost all students participating in the study do not see that distance learning provides individualized instruction.

Problems encountered

Approximately 1/3 (32%) of the participants report having network breakdowns. A large proportion of the participants (75%) do not master the use of basic software (Word PPT and Excel), and 77% of those surveyed do not master web page design software.

The results of the present study show that 28.4% of the students claim to have difficulties with computer equipment and materials. In addition, 77% of the students stated that they had encountered difficulties (of varying frequency) in the use of the devices adopted by the teacher to provide distance learning.

Student satisfaction with distance learning

The study of the degree of satisfaction of the participants allows us to highlight that only 16% have a high level of satisfaction, while about 48% of the students specify a low level of satisfaction.

The calculation of the student recommendation score (NPS) is negative (-76). This shows a low satisfaction with the recommendation of FAD as a complementary teaching method at ISPITS.

Inferential Analysis

Univariate logistic regression shows that several variables are associated with satisfaction with e-learning. Indeed, the relationship between educational level and low satisfaction is significant. This shows that S4 students are 20% less likely to be less satisfied than S2 students. The same is true for S6 students who have a 72% lower chance compared to S2 students. Also, a student whose budget is between 500 DH and 1,000 DH is significantly associated with low satisfaction. The coverage by the internet network plays a determining role in satisfaction. Students with this coverage have less than a 23% chance of having a low satisfaction than those without network coverage. Regarding technical difficulties, students without difficulties are more satisfied than those with difficulties. Regarding the perception of e-learning interest, the relationship is highly significant, so students with a medium perception have a 4.6 times higher risk of having low satisfaction compared to students with a low perception (**Table 1**).

Table 1. Inferential analysis, bivariate, & multivariate logistic regression

Variable		n (%)	Lower sat: n (%)	Univariate analysis		Multivariate analysis	
				ORb (95% CI)	p-value	ORa (95% CI)	p-value
Gender	Male (R)	20 (18.3)	23 (21.1)	1			
	Female	28 (25.7)	38 (34.9)	0.840 (0.391-1.840)	0.674		
Level of study	S2 (R)	29 (26.6)	21 (19.3)	1		1	
	S4	8 (7.4)	29 (26.6)	0.200 (0.070-0.520)	0.001	0.160 (0.040-0.650)	0.010
	S6	11 (10.1)	11 (10.1)	0.720 (0.260-1.980)	0.720	0.650 (0.059-7.180)	0.720
Age	<20 years (R)	24 (22.0)	24 (22.0)	1		1	
	20	12 (11.0)	23 (21.1)	0.522 (0.210-1.280)	0.150	1.560 (0.370-6.480)	0.530
	>20	12 (11.0)	14 (12.8)	0.850 (0.320-2.230)	0.750	1.150 (0.120-10.350)	0.900
Student budget	<200 MAD (R)	16 (14.7)	23 (21.1)	1		1	
	200-500 MAD	12 (11.0)	17 (15.6)	1.010 (0.380-2.690)	0.977	0.987 (0.280-3.430)	0.980
	501-1,000 MAD	14 (12.8)	11 (10.1)	1.830 (0.660-5.050)	0.244	1.090 (0.290-4.040)	0.890
	1,001-1,500 MAD	5 (4.6)	9 (8.3)	0.790 (0.220-2.830)	0.720	0.480 (0.090-2.480)	0.380
	>1,500	1 (0.6)	1 (0.6)	1.430 (0.080-24.710)	0.800	>10 (0.00-∞)	0.990
Scholar	No (R)	10 (9.2)	16 (14.7)	1			
	Yes	38 (34.9)	45 (41.3)	0.740 (0.300-1.820)	0.510		
Internet network coverage	No (R)	1 (0.9)	5 (4.6)	1			
	Yes	47 (43.1)	56 (51.4)	0.230 (0.020-2.110)	0.190	<0.001 (0.00-∞)	0.990
Place of residence	City area (R)	29 (26.6)	21 (19.3)	1			
	Semi-urban area	5 (4.6)	10 (9.2)	0.510 (0.150-1.700)	0.270		
	Rural zone	14 (12.8)	21 (19.3)	0.690 (0.290-1.610)	0.390		
Technological difficulty	Low (R)	29 (26.6)	26 (23.9)	1			
	Medium	10 (9.2)	21 (19.3)	0.420 (0.170-1.070)	0.070	0.780 (0.230-2.540)	0.680
	High	9 (8.3)	14 (12.8)	0.570 (0.210-1.550)	0.270	1.500 (0.390-5.700)	0.540

Table 1 (continued). Inferential analysis, bivariate, & multivariate logistic regression

Variable		n (%)	Lower sat: n (%)	Univariate analysis		Multivariate analysis	
				ORb (95% CI)	p-value	ORa (95% CI)	p-value
Perception of interest distance learning	Low (R)	11 (10.7)	38 (36.9)	1			
	Medium	20 (19.4)	15 (14.6)	4.600 (1.780-11.880)	0.002	5.160 (1.700-15.660)	0.004
	High	14 (13.6)	5 (4.3)	9.670 (2.850-32.80)	<0.001	11.190 (2.570-48.570)	0.001

The inclusion of all variables with a p-value less than 25% in the multivariate regression model showed that only grade level and perceived interest in ADF were significantly associated with low satisfaction. The association was significant for the level of study (ORa=0.16; confidence interval [CI]=[0.04-0.65]). In addition, students with a medium perception had a risk of 5.16 compared to those with a low perception (ORa=5.16; CI=[1.70-15.66]).

DISCUSSION

Two-thirds of the participants agree that face-to-face training is better suited to their learning style than e-learning, but do not consider e-learning to be mandatory. Also, 71% said that face-to-face training is more accessible and provides contact time with peers for a large proportion of this target population.

Following the study [3], which discusses the characteristic of e-learning, namely the diversification of interactions and the emphasis on the group concept, almost all of the respondents stated that e-learning is not individualized teaching and 36% do not agree that one learns alone. This is in line with Vygotsky (1896-1934), a group learning theorist, who states that "cognitions emerge in and through social interaction". We also learn differently with new technologies. Students have a smartphone (93%) and a laptop (67%), which are prerequisites for e-learning.

Nevertheless, only 46% have access to the Wi-Fi network and 49% use prepaid recharges, which results in an additional cost for students. This observation encourages the Ministry of Education to conclude partnership agreements with telecommunication companies to ensure that students have access to the Internet.

In addition to the cost, 3/4 of the participants do not master the use of electronic presentation software or web page design software, which is consistent with [4]. This requires the establishment of platforms that allow students free access to distance learning [5-10].

Consequently, 50.0% find this learning method difficult and do not learn more than face-to-face training (62.0%). Moreover, 28.4% of the respondents said that they had difficulties with computer equipment and materials and

only 23.0% had no difficulties. As for the use and operation of the training platform, only 22.9% of participants were able to overcome these difficulties.

Thus, the results show that 40.4% of the students are not very satisfied with the conduct of the e-learning, 35.8% for planning and programming, 41.3% for teaching methods, 34.9% for evaluation and controls, 43.1% for the pace of training activities, 47.7% for the pedagogical monitoring at a distance and 38.5% for the resources provided to learners. The students are satisfied with the course materials (45.0%), the duration of the training (38.5%), and the deadline for submitting the work (42.2%). This is understandable since e-learning is characterized by flexibility and the student can adopt his own learning pace. Satisfaction was also noted by 32.1% of the participants for the management of conflicts and tension between students and teachers, and 33.9% for the availability of the distance trainer, which also refers to the other characteristic of e-learning, which is accessibility.

In another aspect, the present study showed that low satisfaction is significantly associated with the level of study (ORa=0.16; CI=[0.04-0.65]). In addition, students with medium perception had a risk of 5.16 compared to those with low perception (ORa=5.16; CI=[1.7-15.66]). However, the study found a non-significant association with a range of variables including age, residence, and student budget.

CONCLUSIONS

This study has attempted to describe the reality of vocational training in the era of COVID-19 at ISPITS Tiznit, in particular, the use of e-learning and its effect on student satisfaction.

The results show that distance learning has some shortcomings that could hinder the achievement of the objectives assigned to the training. This observation seems legitimate given the unexpected adoption of this mode of training without any prior preparation.

The participants in this study link these shortcomings to several reasons:

- (a) the absence of devices adapted to e-learning,

- (b) rapid introduction of e-learning without preparation given the emergency, and
- (c) technical and material difficulties for some participants.

The main results reveal, among other things:

- (a) Distance learning is not adapted for two-thirds of the students,
- (b) Distance learning does not allow them to learn more than face-to-face learning for 75% of the participants,
- (c) Half of the students find this learning method not easy, and
- (d) About half (48%) of the students indicate a low level of satisfaction.

Significant relationships were also confirmed between satisfaction and level of study ($p=0.01$) as well as with the student's perception of e-learning ($p<0.001$).

Despite this relevant contribution of the study, it is important to note that the study, like any research, has limitations among which we can mention: the method and the sample size.

Indeed, this research has tried to shed light on the reality of distance learning at ISPITS Tiznit. Other research can evaluate the experiences of other institutions of higher education to consolidate the achievements and point out the gaps in a perspective of further improving distance education.

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Declaration of interest: Authors declare no competing interest.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

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