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Abstract

The period of quarantine, which was due to the global health crisis caused by the Covid 19 virus, constituted a laboratory to form, strengthen, and deepen the degree of digital inequality. This situation dictated the need to move from adopting the face-to-face education pattern to "digital education". For this purpose, we proceeded by asking the following question: Do digital inequalities affect the degree of benefit from distance education? In this context, we assume that the level of digital inequalities affects the benefits of distance education that will be obtained by university students. We start with a sample of Ibn Zohr University students (59). In short, the research findings allow us to conclude that the degree of benefit from distance education (distance lectures) is affected positively by four main variables. The results indicate that the place of residence of students is affected by the degree of Internet access, and subsequently the degree of access to distance education. Furthermore, the availability of scholarships has an impact on the degree of access to distance education. Also, Internet weakness often causes technical problems, which affects the degree of benefit from distance education.

Keywords: Digital inequalities, Distance education, Digital skills, 21st century skills, Covid-19

Introduction

The quarantine period caused by COVID-19 has been a laboratory for deepening the degree of inequality that exists in global society. After this virus led to the elimination of a significant proportion of people, the world then experienced a turbulent transformation in many dimensions (economic, social, and cultural), and the educational dimension cannot be excluded from this situation (Adedoyin & Soykan, 2023; Papadopoulos & Cleveland, 2023). The majority of universities in the world have found themselves forced to close their doors, abandon the face-to-face form of education, and replace it with distance education (Strielkowski, 2020). In order to run their services, most countries and institutions will turn to technology as a solution to their problems. As a result, society will show signs of "liquidity" (Bordoni, 2016; Palese, 2013; Van de Oudeweetering & Voogt, 2018) and then network society (Castels, 2006).

The transition from face-to-face services to the form of distant services (the case of distance education), with the help of the possibilities provided by technology (Haleem et al., 2022), is not an easy process but poses many challenges. Before elaborating on this, we should point out that the field of education is gone and is still the one in which social inequalities are clearly visible (Aiston & Walraven, 2024). The educational outcomes were seen to have a very close relationship with the sociodemographic background of the students. Therefore, the inequalities that occur in the university and in the learning process in general are due to the social and economic status of the learners (Brooks, 2015). In March 2020, Morocco, like other countries, adopted the distance education model, which is in line with the education model compatible with emergency situations such as wars, epidemics, and conflicts (Hodges et al., 2020). However, it should be noted that distance education is very different from emergency remote education. Ibn Zohr University worked to record and present distant lectures at the beginning of the quarantine. This is in full respect of the quarantine measures that dictated the need to abandon the

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pattern of in-person education. Furthermore, the Faculty of Arts and Humanities worked to establish its own channel called "Kolliya TV," which was the first of its kind in Morocco. In addition, this channel is interested in recording lectures and then all the scientific and pedagogical activities of the institution. To this extent, the university has offered a distance education program. In this paper, we argue that any distance education, in the case of Morocco, is affected by the level of digital inequalities that exist in this category affects any distance education in Morocco. We consider distance education as a variable that enables us to measure the third dimension of digital inequalities, "benefit" (van de Werfhorst et al., 2022). However, it should be noted that this dimension is only possible to understand with the help of the first dimension "access" and then the second dimension "use" (Büchi et al., 2016) of this type of complex digital and dynamic inequalities (van Dijk & Hacker, 2003; van Laar et al., 2019; Iñiguez-Berrozpe & Boeren, 2020).

It seems possible to classify studies on distance education, as the analytical concept of this study, into two categories. The first category of studies focuses on two groups of analytical units, students and then professors at the same time (Elfirdoussi et al., 2020; Ndibalema, 2022). The second type of study only examines the category of students who are interested in benefiting from this type of education (Unger & Meiran, 2020). This paper belongs to the latter type of study, where we focus on the student category. Some researchers link the variation in the benefit of distance education to purely technical factors such as ICT infrastructure, technological literacy, and the skills necessary to use technology (Ndibalema, 2022). Other researchers argue that it is the financial cost of the internet and devices that reduce this degree (Tulinayo et al., 2018). Another study found that some lecturers' digital competence is one of the factors that reduce opportunities to benefit from distance education (Ndibalema, 2020).

The paper is organized as follows: The second section provides the theoretical framework of the study, which focuses on two main concepts: There are digital divides between university students and distance education. In this study, we focus on the students at Ibn Zohr University, the latter of which attracts three types of students who differ in the geographical origin to which they belong: rural, semi-urban, and urban. The third section describes the method used in the data collection process, as well as a summary of the measurement method for data analysis. The fourth section includes the study's results, in which we tried to determine the relationship between some variables (student residency, availability of scholarships, Internet weakness) and the benefit of distance education. The final section concludes with a discussion of how the proposed variables interact in determining the degree to which university students' benefit from distance education.

Research Questions

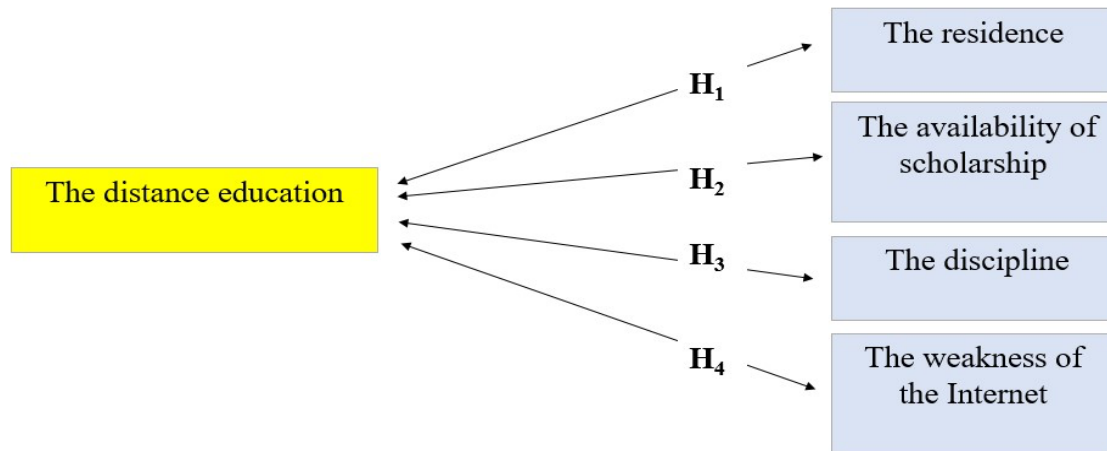
Therefore, digital inequalities are one of the challenges of distance education. To illustrate these challenges, this paper asks the following research questions:

1. Does the place of residence affect the degree of benefit from distance education (distance lectures)?
2. Does the availability of the scholarship have an effect on the degree of benefit from distance education?
3. Does the nature of the specialization (scientific / literature) that individuals study affect the degree of benefit from distance education?
4. Is there a relationship between the weakness of the Internet and the preferred style of education (face-to-face or distance)?

Statistical hypotheses

- 1st hypothesis (H1): There is a statistically significant relationship between the place of residence and the degree of access to distance education (distance lectures).
- 2nd hypothesis (H2): There is a significant impact of the availability of the scholarship on the degree of access to distance education.
- 3rd hypothesis (H3): There is statistically significant relationship between the nature of the specialization studied by individuals (scientific / literature) in the degree of access to distance education.
- 4th hypothesis (H4): There is a statistically significant relationship between the weakness of the Internet and the preferred pattern of education (face-to-face or distance).

Figure 1. Proposed statistical hypotheses



Theoretical Framework

To answer the research questions, we will begin this section by explaining digital inequalities as an essential characteristic of societies where the Internet holds significant influence. In the second part of this section, we will direct our attention towards distance education as a viable substitute for traditional in-person education.

Digital social inequalities

The concept of "digital inequalities" emerged in the 1990s (Mutsvairo & Ragnedda, 2019). The primary use of this concept was associated with policy makers discourse (Ball-Rokeach, & Jung, 2010). This use is relatively very broad and is predominantly misunderstood, as the inequality in access to ICT (information and communication technology) means was meant by lack of access to the Internet (Srinuan & Bohlin, 2011). In addition, the first use was not by the same designation but by the use of the "digital divide" to refer to digital inequalities (Srinuan & Bohlin, 2011).

Scholars and experts endeavored to establish a precise and comprehensive definition of the digital divide in the aftermath of the 1990s. One of the results of these attempts is to offset the "digital divide" with "digital inequalities" (Gunkel, 2003). One of the difficulties in defining digital inequalities is their complexity (a multidimensional phenomenon) and dynamic nature (van Dijk & Hacker, 2003; Billon et al., 2009; Várallyai et al., 2015). Focusing on the determinants of Internet access, digital inequalities were defined as the gap between the haves and the have-nots (van Dijk, 2006).

Digital inequalities are characterized, at least, by two analytical levels. The first one concerns the one-dimensional analytical level. This level often focuses on defining digital inequalities across a single cause or variable. To illustrate this, digital disparities are defined as the difference in Internet access. This level can be described as a narrow definition of digital disparities. Unlike the previous level, the second level focuses on defining digital inequalities by adopting more than one dimension: national/international, rural/urban, individual/family (Andrés et al., 2010) and more than one variable (Calderón Gómez, 2022). This level is called multidimensional analysis of digital inequalities (Bonfadelli, 2002).

Hargittai (2021) defines digital inequalities as the effect of the social status of individuals on the access to the digital content, the required skills, the type of use and the learning achievements from a digital participation. This definition includes, at least, two very important issues. The first one is the social basis of digital inequalities. In other words, the social background in the study of digital phenomena is necessary because all users have social and demographic characteristics, which may be beneficial or not to access and use the technical means. The second issue focuses on the intersection between the three dimensions of digital inequalities: access, use, and benefits.

Another definition of digital inequalities was reported by Alexander Stengel which based on the differences between individuals in the access to means of communication and information as well as digital data (2015). These differences can occur in several levels, including the geographic location (rural, urban and semi-urban), age, gender and social class. These social characteristics may have a direct impact on the degree of access of individuals to the means of communication and information. Despite the importance of this approach, the definition given by Stengel remains fragmented because the access alone is not sufficient to understand this phenomenon.

Hilbert (2015) viewed digital inequalities as a model of inequalities, but this model occurs in access to, utilization of, and benefits from digital ICT (information and communication technology). These inequalities represent a social challenge more than a technical one (Hilbert, 2015). Hilbert noticed that the inequalities in their digital form are not limited to digital means, but rather goes beyond this consideration.

The use of digital media and digital content results in social benefits, leading to social differentiation between individuals. This social differentiation is a result of the interaction of the social, cultural and economic capitals of the social actors with the digital media. This allows creating a digital capital, which ultimately leads the individual to be in a position of digital inequality (Park, 2017). The digital inequalities certainly seem to be characterized by three features that are almost distinguishing them from other types of inequalities. The first one is the complex interactions with several dimensions such as social, economic, politic and cultural. These dimensions combine the objective and subjective factors. The second characteristic is the systematic and structural nature, which makes it possess a multilevel character. This intersection necessitates even being in the epistemological sense of the study (interdisciplinary or multidisciplinary) (Parti & Szigeti, 2021). The third characteristic shows that digital inequality transcends opportunities to outcomes, which would deepen digital inequality and make it influential in social life of individuals. In this regard, the issue of resisting digital inequality requires a collective consciousness, and then does it become a societal phenomenon.

Distance education

The Covid-19 pandemic period was a crucial period in the educational field at all levels around the world. It was necessary for educational institutions to adopt a new style of education based on digitalization, which is an alternative to education based on face-to-face interaction (Rof et al. 2022). Thinking about ways to employ and benefit from digital technology can be considered the first moment for applying this technology in the educational field. Nowadays, the world seems to be more dependent on the digital technology owing to the technological advances and health crisis (Romli et al., 2022).

E-learning is defined as learning that is fully or partially online (Means et al., 2009). The integration of technology in education leads to a significant change in the characteristics of traditional learning. As a consequence of this change, the place of learning has moved from school (physical) to the digital domain (virtual). Moreover, the learning is no longer limited to a specific time, but rather it has become defined by the learners. We also do not forget the change in nature of the devices used for learning.

In the digital or electronic learning process, the individual character of the e-learning style is clearly evident (Horvath et Steinberg, 2023). The latter is a relatively new tool with the potential to radically improve participation and achievement rates in education. The benefits include the flexibility of place and time. Thus, the digital learning offers a potential opportunity for learners to obtain appropriate and high-quality training and education (Orton-Johnson et al., 2013).

The participation opportunity using digital technology is not available to everyone, which causes some social groups to fall into the so-called digital inequalities. The feature of technology in the educational field is the ability of the learner and the educational actor to choose the digital educational content. Therefore, the importance of the sociology of education, in its relationship to technology, is raised in order to understand the most important dynamics of education in the school institutions (Brooks, 2015).

Finally, we can say that the e-learning is an important modern education mode, owing to the opportunities provided for both teachers and learners. One of these opportunities provided to teachers is the ability to deal with a large number of learners without attending at the same time and in the same place. The learners also have the possibility of meeting teachers other than those in their educational institutions (Means et al., 2009).

The identity of the learner can be determined through two completely different perspectives (Berg-Sørensen et al., 2010). The first one is represented by essentialism, which considers that identity is made up of natural elements in the individual. These elements are entrusted with determining his identity, as a human, and through these elements the difference emerges between people. According to essentialism, these elements are not affected by change, because they remain inherent to the individual. In contrast to this first perspective, the social constructivist perspective considers identity of the learners, as not being natural in individuals. This is justified in the fact that the social context, interactions and social institutions (e.g. family and school) are the most important factors that control the identity of individuals. Therefore, the constructivist perspective considers that identity is a social and not a natural construct. Regarding the increase in the importance of technology in school life, it is no longer possible to assimilate the forms of identity presented through technology, depending only on the previous perspectives (constructivist and essentialism). Georges distinguishes three forms of identity in the digital domain (Georges, 2011). An individual can establish a digital identity for themselves by using an email, as it is a necessary requirement in the process of constructing a digital identity. The first form is called "declarative or authorized identity", which absolutely depends on the real indicators used during the creation of the account/identity (name, age, gender, educational level, family status, etc.). The second form named "representational identity" is related to the various activities performed by users in digital media, such as virtual friendship. The last form is the "calculated identity." In this form, the number of people in the friend list is calculated, followed by the number of groups to which the user belongs. This last form depends on purely quantitative variables, which allow for calculating the identity of users (Fanny, 2011).

Method

Since the aim of the study is to test the relationship between digital inequalities and distance education, this paper will adopt the quantitative method, on a sample of students who are required to be following their studies at Ibn Zohr University. This method is the one that will benefit us the most, because it relies on statistical data, and helps in determining the statistical relationships between independent and dependent variables (Muijs, 2011).

Sample and procedure

Table 1 summarizes the characteristics of the sample, which is constituted of 59 individuals/students categorized into 26 male and 33 female. The age of participants ranged from 20 to 28 years. The place of residence was divided into three places; urban (59.32%), semi-urban (23.72%), and rural (16.94%). For the specialization of the sample members, we distinguished between two types: scientific (Faculty of science) and literary (Faculty of Arts and Human Sciences).

Data collection

In this study, a digital questionnaire was used for data collection during the period from 6 October to 15 November 2022. The undergraduate students (not exceeding the level of the bachelor) at Ibn Zohr University (Morocco) constitute the sample for this study taking into account a set of criteria. The selection of the students was performed randomly. I draw attention to the issue of representative of the sample, which requires that its number exceeds 30 individuals or more, which is found in the studied sample (Muijs, 2011). In addition, we are interested in benefiting from distance education during the closure of Moroccan universities owing to the Covid-19 pandemic.

The model form in this study consists of various questions, which are divided into four themes. The first one deals with specific questions about the nature of the social and demographic data of the sample members. The second theme is related to the access to the Internet as the first dimension of digital inequalities. The third topic is concerned with the dimension of the Internet use, by adopting questions

that contain skills. The fourth theme reports the questions about the benefits from the Internet, especially distance education. In presenting the results, we will focus on those that have been shown by tests to be statistically significant ($P \leq 0.05$). Results greater than this value will not be indicated.

Table 1. Sociodemographic Characteristics of the Sample.

Variables	Value	Frequency	%
Gender	Male	26	44.06
	Female	33	55.93
Age	20	4	6.77
	21	12	20.33
	22	16	27.11
	23	9	15.25
	24	6	10.16
	25	9	15.25
	27	1	1.69
	28	2	3.38
Residence	Rural	10	16.94
	Semi-urban	14	23.72
	Urban	35	59.32
Discipline	Literature	41	69.49
	Scientific	18	30.50

Data analysis and Measurement

To analyze the data extracted through a digital questionnaire, we used IBM [SPSS](#) package version 26. In the current study, the Chi-square test was used to verify the validity of the hypotheses adopted in interpreting the statistical relationship between the independent variable (digital inequality) and the dependent variable (access to distance education). This test is a nonparametric test and serves to determine the possibility of a statistically significant effect between two variables (McHugh, 2013).

Results

The effect of place of residence on the degree of benefit from distance education

We tried to link each of the geographical variables (place of residence) with other variables such as creating digital content, degree of availability of Internet, and degree of benefit from

Table 2. Chi-square test for the relationship between independent variable (place of residence) and the dependent variables (creating digital content, degree of availability of internet, and degree of benefit from distance lectures)

How much do you benefit from digital lectures during the quarantine period?							
		Very weak	Weak	Good	Very good	Total	<i>P</i>
Residence	Rural	-	8	2	-	10	0.004
	Semi-urban	-	9	5	-	14	
	Urban	-	10	25	-	35	
Total		-	27	32	-	59	
Find out how to create digital content (video, photo and advertising)							
		Very weak	Weak	Good	Very good	Total	<i>P</i>
Residential	Rural	-	9	1	-	10	0.009
	Semi-urban	-	10	1	3	14	
	Urban	-	35	-	-	35	
Total		-	54	1	3	59	
Available Internet Score							

		3G	4G	WIFI common	WIFI private	Total	<i>P</i>
Residential	Rural	-	8	1	1	10	0.016
	Semi-urban	-	9	1	4	14	
	Urban	1	9	1	24	35	
Total		1	26	3	29	59	

distance lectures. From Table 2, it turns out that the individuals participating in this study are predominantly located at the urban zone. We note that the majority of students living in the rural area (more than half) benefited from distant lectures, while only two cases of students living in the rural area benefited well. As for students living in the semi-urban zone, the majority of them 15.2% had a low degree of benefit from lectures ($n = 9$), while only 8.4% benefited well from the lectures ($n = 5$). In contrast, the major percentage of participants (42.2%) living in the urban area benefited from digital lectures to a good degree ($n = 25$). Looking towards the statistical significance, it was found that the p -value is 0.004 (less than 0.05). This suggests that there is a statistically significant relationship between the place of residence and the degree of benefit from the lectures during the quarantine period.

The effect of the same independent variable (place of residence) was studied as a function of the ability to create a digital content. Table 2 shows that 90% of students from rural areas had a low capability to create digital content, while only 10% were able to create digital content. In addition, we found that all respondents located at the urban area had a weak degree of empowerment for creating a digital content. The level of statistical significance was equal to 0.009 and the chi-square value was equal to 13.594.

The same table contains the relationship between the place of residence and the degree of Internet availability. The obtained results revealed that the majority of the respondents from the rural area have access to Internet with fourth generation (4G) technology. However, 20% of the participants from rural area used the private and shared Wi-Fi networks. Statistically, the level of significance was found to be 0.016, while the value of the Chi-square test was 15.533.

The relationship of obtaining a scholarship and benefiting from distance education.

Table 3 shows the Chi-square test between the availability of the scholarship and the following variables: the degree of knowledge of programming languages, the degree of benefit from digital lectures, and the ability to create digital content. As shown in the table, only (24%) of scholarship-earning students have a good/or very good knowledge of programming languages. While, one-third (34%) of this group with a grant has a degree of knowledge of programming languages between weak/very weak. Similarly, the majority (27%) of participants who do not have the grant, their degree of knowledge of programming language is between weak or very weak. However, the category with a good/or very good level of knowledge of programming languages does not exceed (15%). Thus, it seems clear from the chi-square test that there is no statistically significant link between the availability of a grant and knowledge of programming languages ($P = 0.320$).

Table 3. Chi-square test for the independent variable (Availability of scholarship) and the dependent variables (access and use of the Internet, degree of mastery of programming languages, benefit from distance lectures and creation of digital content)

		Degree of knowledge of programming languages				total	<i>P</i>
		Very weak	Weak	Good	Very good		
Availability of scholarship	yes	4	16	10	4	34	0.320
	no	7	9	8	1		
Total		11	25	18	5	59	
		How much do you benefit from digital lectures during the quarantine period?				total	<i>P</i>
		Very weak	Weak	Good	Very good		

Availability of scholarship	yes	-	22	12	-	34	0.001
	no	-	5	20	-	25	
<i>Continued</i>							
Total		-	25	32	-	59	
Find out how to create digital content (video, photo and advertising)							
		Very weak	Weak	Good	Very good	total	P
Availability of scholarship	yes	24	1	3	6	34	0.031
	no	25	-	-	-	25	
Total		49	1	3	6	59	

The variable of the degree of benefit from digital lectures is affected by the availability of the scholarship. We found that almost a third of scholarship individuals said that the degree of benefit from digital lectures is good. In contrast, we find that the two third of scholarship participants reported lower levels of benefit from digital lectures. 80% of students who do not have a grant are benefited with a good degree, while 20% of them have declared a low level of satisfaction in terms of benefiting from distance courses. The significance level and chi-square test values were found to be 0.001 and 11.601, respectively. Thus, the test showed that there is a statistically significant relationship between the availability of the scholarship and the degree of benefit from the digital lectures.

The degree of mastery of how to create digital content can be affected by the availability of a grant. The participants who received a scholarship are 34 students, the majority of them have a low/very low ability to create digital content. However, 9 out of 34 students had a good/very good capability of creating digital content. For the category of students who did not receive a scholarship, it appears that all participants had low ability in terms of creating digital content. The significance level is 0.031, while the chi-square test value is 8.854. Therefore, we can conclude that there is a statistically significant relationship between the availability of the scholarship and the students' ability to create digital content.

The impact of the weakness of the Internet on the preferred style of education

In Table 4, we analyze the effect of the technical problems on the preferred learning style, in order to test the statistical significance between these variables. Based on this test, we found that students who do not have technical problems related to the Internet (almost half of the participants) prefer distance education. However, the other half of the students who have technical problems prefer face-to-face education. The degree of statistical significance has been reached 0.000, which clearly shows the existence of a significant relationship between the technical problems and the preferred style of education. Therefore, it can be concluded that the technical problems lead students to choose the face-to-face education method instead of distance education, which was approved during the quarantine period.

Table 4. Chi-square test for the independent variable (technical problems) and the dependent variable (preferred learning style)

		Preferred education mode			Total	P
Do you have technical problems related to the weakness of Internet?		Face-to-face education	Distance education			
	No	-	28	28	0.000	
	Yes	31	-	31		
Total		31	28	59		

The correlation of the nature of the specialization of students and the degree of benefit from distance education

The chi-square test of the university specialization of students was studied as a function of two dependent variables: the ability to create digital content and the degree of benefit from distance lectures. The obtained data are presented in Table 5. As a result, we note that the students of literature (around two thirds of participants) had a very weak ability to create digital content. There is only one student of literature who had a good degree of ability to create digital content. In contrast, we find that the students learn science (around one third of participant) differ in their degree of the ability to create digital content. From Table 5, it is evident that around half of the students learn science were able to create digital content with good or very good degrees, whereas the other part of science students have a weakness (ranged from weak to very weak) in the creation of digital contents. Based on the P-values (less than 0.05), the relationship between specialization and the degree of benefit from distance lectures is statistically significant. From Table 5, we note that there is a weak or good degree of benefit from distance lectures, whether literary or scientific alike. The majority of science students (two thirds) benefit little from the digital lectures during the period of quarantine restrictions of COVID-19.

Table 5. Chi-square test for the independent variable (Discipline) and the dependent variables (creating digital content and degree of use)

		Find out how to create digital content (video, photo, advertising)				Total	P
		Very weak	Weak	Good	Very good		
Discipline	Literature	40	-	1	-	41	0.000
	Scientific	9	1	2	6	18	
Total		49	1	3	6	59	
		How much do you benefit from digital lectures during the quarantine period?				Total	P
		Very weak	Weak	Good	Very good		
Discipline	Literature	-	15	26	-	41	0.033
	Scientific	-	12	6	-	18	
Total		-	27	32	-	59	

However, a large proportion of the students of literature (63.4%) benefited from distance lectures with a good degree. The P-value of this test is 0.033, suggesting that the relationship between the specialty of the students and the degree of benefit from distance courses is statistically significant.

Discussion

By virtue of the fact that the individual exists in a specific geographical area, in which the socialization process takes place through social interactions. However, this geographical space or place of residence has an influential impact on many of the individuals' practices. As shown in Table 1, it was found that the place of residence affects the individuals' ability to access and use of Internet. It also affects the degree of ability to create digital content as well as the degree of benefit from distance lectures during the quarantine period. This can be explained by adopting three main dimensions. The first dimension is that the place of residence affects the degree of the Internet that an individual can access, which is called 'Internet access' (Petersen et al., 2020).

Some studies show that the insufficient Internet access creates digital inequalities of the first level (van Deursen & van Dijk, 2019; Gonzales, 2016). This dimension constitutes the subject of the first studies on digital inequalities. This phenomenon is regarded as the disparity between the people who have access and those who do not have access to the Internet. However, the recent advances in digital technologies contributed to bringing an interest in another dimension in digital inequalities of the second degree, which is based on use. Despite the degree of the Individuals' Internet access, there is no unified use. The latter can result in a hierarchy between users because the use of the Internet required special skills (Van Deursen et al., 2014).

The use of the Internet and its benefit, especially in the educational field, is mainly related to the possession of digital skills for the twenty-first century (van Laar et al., 2019). The latter consist of six

types of skills. The first one is “Information digital skills”, which refers to the ability to search, evaluate and manage the information (Ala-Mutka, 2008). The second type is called “Collaboration digital skills”, which relate to information transfer via the Internet by providing information to as many users as possible (Schulze et al., 2016). The third type is “Digital collaboration skills”, which is the ability to work effectively within teams in order to achieve a common goal (Noss, 2012). The fourth type is “Critical-thinking digital skills”, representing the ability to make and build distinct judgments about information and communication based on reflective thinking with sufficient arguments (Higgins, 2014). The fifth type of digital skills named “Creative digital skills” refers to the appropriate use of online tools to create online digital content (Oldham & Da Silva, 2015). Finally, the last type is “Problem-solving digital skills”, which is related to the use of ICT to analyze a problem situation and disseminate knowledge in finding a solution for it (Neubert et al., 2015). In the same context, we can consider that the specialization of respondents had a statistically significant relationship with the degree of mastery of some digital skills such as the creation of specific digital content and benefit from distance education. This suggestion was confirmed by statistical data given in Table 5. The nature of the specialization in which students study interferes with the degree to which they can use ICT skills (van Deursen & van Dijk, 2009; Oliveira et al., 2015). Linking digital skills to distance education, the latter requires a high degree of skill quality in order to benefit from this type of education (Asher 2021). The annual report on the use of technology by Moroccan families indicated that one out of every ten Moroccan families is connected to the Internet (National Telecommunications Regulatory Agency 2020). The percentage of urban households connected to the Internet increased from 80.4 % in 2018 to 90.2 % in 2020. In the rural areas, the percentage of households connected to the Internet was increased from 56.8 % in 2018 to 71.9 % in 2020 (National Telecommunications Regulatory Agency 2020). It can be said that access to the Internet, does not mean that its use will be good, and it is benefited because it requires specific skills.

Some studies confirm that the connection between technological access and educational choices is not readily apparent (Yanguas, 2020). However, this paper has shown us this, whenever there are technical problems, such as poor access to the Internet, students choose the in-person education pattern, but if the Internet score is good, students choose distance education.

The Availability of scholarship is one of the variables that can also be adopted in analyzing the relationship between distance education and digital inequalities (Chytrý et al., 2022; Göksu et al., 2021). It can be said that the availability of scholarship or not can affect the tools used to access the Internet. It can also affect the degree of benefit from distance education. The students who received a scholarship always benefit from distance education more than those who did not receive a scholarship. Therefore, we conclude that the economic aspect is of prime importance in studying digital inequalities and their impact on distance education (Burbules et al., 2020). The features that distance education enjoys in European and American countries find their opposite in other countries (Mathrani et al. 2021). In the present study, we find that the Internet is available in rural areas, despite its scarcity, as evidenced in Table 1. Therefore, if the rural areas of the country that do not belong to the context of the study live in digital exclusion, then, according to the aforementioned report, they only know digital inequalities, and this also applies to developing countries (Mathrani et al., 2021).

Conclusion

The COVID-19 health crisis has forced the majority of teachers to completely reconsider the tools adopted in the teaching process. Students have also adapted to the new education mode in terms of geographical distance. In the current study, we have reached three main results. The first conclusion is that the place of residence of students is of great importance on the degree of the Internet access, and subsequently the degree of access to distance education. This finding shows that there is an interaction between digital inequalities and other patterns of inequalities such as geography (van de Werfhorst et al., 2022). Therefore, Contexts are just as crucial in the examination of digital acts (Warschauer, 2002). The second finding suggests that the availability of economic support (the availability of scholarship) has an impact on the degree of access to distance education. The latter can be explained by the fact that the devices for accessing educational content have a significant relationship with the economic status of learners and their families (Scherer & Siddiq, 2019; Vitral Rezende, 2023). The third finding is that the

Internet's weakness often causes technical problems, which affects the degree of benefit from distance education (distance lectures), It also affects the preferred mode of education. The latter conclusion is that the disciplines taught by university students have an influential effect on the degree of access to distance education. This is the case, to diminish the degree of inequalities between undergraduate students, it is necessary to include digital skills in all university disciplines, which will provide a quality education (Haleem et al., 2022).

The use of technology in the context of university education poses challenges that vary in quality and degree (Greenhow et al., 2023). The first one of these challenges is the method and type of assessment by which a score will be tested that enables students to lecture presented. This challenge relates to the digital skills of professors and students. The study concluded that not all students are able to benefit from distance education (Asher, 2021). The second challenge is related to teaching methods, as the traditional pedagogy adopted in teaching is no longer able to keep pace with the specificity of digital education (Nehring et al., 2019). This challenge forced the transition from face-to-face interaction pedagogy to digital one (Bećirović, 2023). This shift in the pedagogical pattern had three basic elements: pedagogical orientation, pedagogical practices, and digital pedagogical competencies (Väättäjä & Ruokamo, 2021).

In brief, the distance education needs more empirical studies, in order to evaluate the outcomes of this education mode. The majority of university students prefer face-to-face education instead of distance education. This could be explained by the disability of the students to use the Internet for learning. Thus, it is important to perform comparative studies between the university students and other categories of learners, in terms of benefiting from distance education (van de Werfhorst et al., 2022). Finally, we recommend that the Moroccan government, as well as educational institutions, implement a policy to provide free internet and digital devices to all students. This initiative aims to promote online learning and ensure that individuals are engaged and safe during the pandemic (Jena, 2020; Akhasbi et al., 2022).

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