

## **THE EFFECTS OF E-LEARNING ON THE UNIVERSITY EDUCATIONAL PRODUCT**

Ion-Dănut Lixandru

The Bucharest University of Economic Studies, Bucharest, Romania

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### **ABSTRACT**

This paper proposes the delimitation of the concept of university product from the perspective of online education, from a theoretical point of view, and tests the consequences of the transition from classical, physical, to online education. The article, from a practical point of view, is based on determining the specific factors behind the changes in higher education needs. At the same time, it seeks to determine the extent to which students who benefit from education adapt to the needs of online education; withal, the aim is to determine the degree of influence of the Internet in the decision to purchase university products or to identify purchasing decisions under different conditions. Changes in the context of the world today lead to a major change in the influence of demand for educational products, and this work demonstrates a shift in the hierarchy of elements of the marketing mix in terms of their influence on consumer decision.

**Keywords:**e-society, online learning, decision making process, marketing, university marketing

### **1. Introduction**

With the advent of new communication and information technologies or the advent of the Internet, both the needs of consumers and the possibilities to meet them have undergone continuous changes in most economic fields and beyond. According to an INSSE report (National Institute of Statistics, 2021), in 2020, 78.2% of Romanian households can use the Internet at home, which is an increase of 2.5% compared to 2019, between which 60.9% representing the urban population of Romania. According to the Digital Economy and Society Index (DESI) of 2020 (European Commission, 2020), Romania ranks 11th in terms of internet connectivity, high-speed broadband coverage has increased to 82% of those connected to the Internet, but remains far behind most Member States (EU average is 86%).

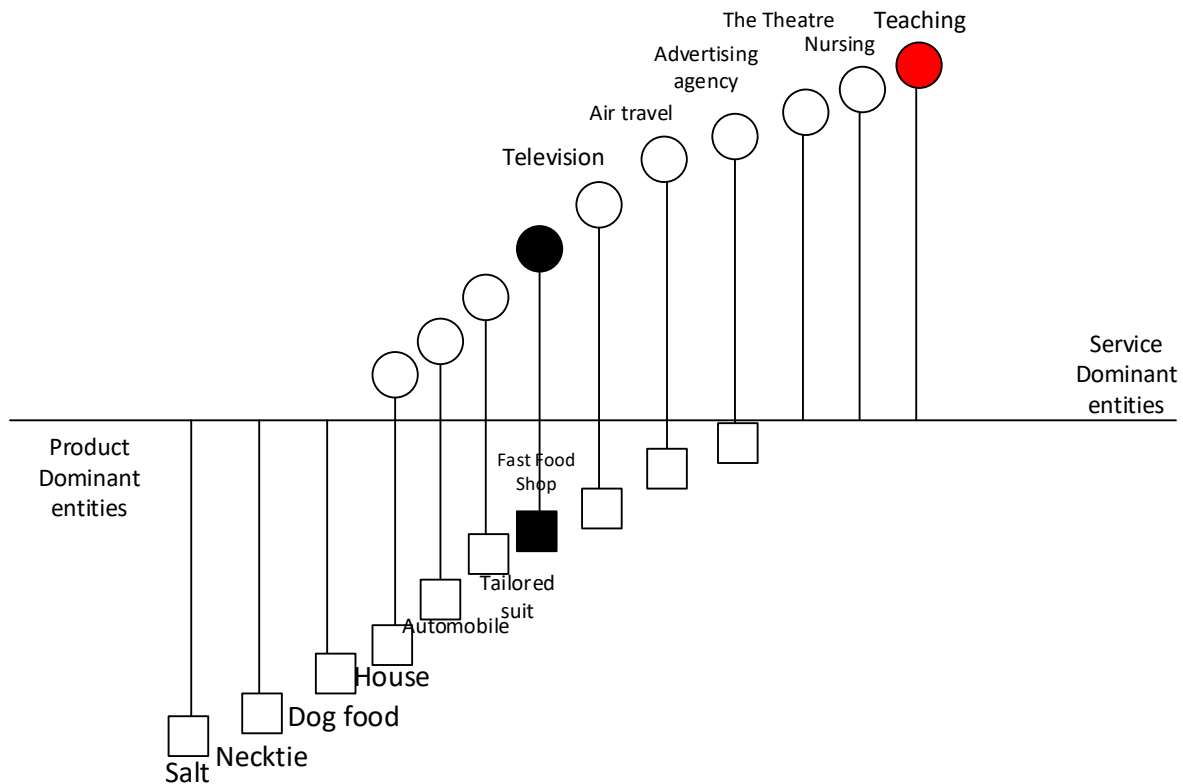
One area that is extremely affected by the changes that the new society brings, is education and it is easy to understand that they produce transformations at all levels of the educational process and at the level of the individuals involved in it.

By correlating the above information, I can extrapolate the concept of online learning, a phenomenon that encompassed the whole world during the Covid-19 period. The questions that the use of the Internet in the educational process can generate may concern the transformations that the teaching methods have undergone with an effect on the direct beneficiaries, either the ways of adapting the educational programs and the teaching staff, or even the process of purchasing a educational product. In the body of this article, I decided to study the phenomenon of acquiring an educational product, in this case, at the level of Romanian higher education, and the changes produced by the information society on it.

## **2. Defining the university product**

Like any organization, the university has a final goal, and if we call it from an economic perspective, it can be profit, be it social in nature. Based on this statement, I can state the idea that they have to sell their products to direct consumers, students, and to make a clear delimitation of those products we can consider the acceptance of Maringe and Gibbs (2009), quoted in Nedbalova, Greenacre and Schulz, who believe that the curriculum is often seen as the product of universities.

Starting from the meaning given by Shostack (1982), as we see in Figure 1, we notice that the educational process is dominated by services, and the main services that the university offers are the study programs, and thus, our idea is strengthened according to which they represent the salable object.



**Fig. 1.** The basic dominance of products and services

Source:Shostack (1982)

Another approach (Dominici, 2009) shows us a possible redefinition of products in the digital context, which puts the consumer at the center of the activity, who in the same framework has responsibilities in creating the product according to personal desires. For the same vision and circumstance, we can notice, in terms of the university educational product, a major involvement on the part of the consumer.

In an interrogative manner, Krachenberg (1972) in an attempt to show what is closest to the definition of the university product, highlights the services that a university can offer, namely teaching, research and extra services, which can represent the educational product. university. The university educational product is something intangible and is also represented by the program that universities offer to consumers, students (Mahajan & Golahit, 2019). The same definition is used to convey the meaning of the university product and it describes it as the

subject of the courses, the options offered and the additional services for students, in the case of MBA programs (Nicholls et al., 1995).

Considering the meanings presented above, we can summarize the idea that the definition of university education product, generally valid, which most authors tend to perceive as close to the truth, refers to the study program that the final consumer (student) procures for consumption. personal.

### **3. Theoretical approaches of the online learning concept**

In the literature there is a distinction between the concepts of education, namely distance learning, online learning and e-learning. One of the clearest conceptions of these (Moore et al., 2011), defines them as follows:

- Distance learning - refers specifically to the space in which the educational process takes place and may also include physical materials that the beneficiary uses;
- E-learning - refers to the use of educational platforms for the distribution of learning materials, which can be available to the beneficiary at any time;
- Online learning - refers to the use of learning platforms and the distribution of the necessary materials, which can be used today to fulfill the purpose of the learning process.

Mayer (2018), develops a definition of online learning that includes three parts related to the tools, methods and purpose of this learning process and names the content in electronic format, computerized devices, as well as knowledge creation as their reference elements.

Taking into account the above, it is easy to deduce that in any of these processes are used several elements that are directly related.

The online educational process includes on the one hand teachers and students, and on the other hand, the services offered by the university and the educational content, interdependent components, and the changes produced by the online environment give a remarkable advantage for creating this link (Grabara & Bosun, 2014). Along with the transformations brought by technology in the educational process, there is also the efficiency of the activity of its components (Elumalai et al., 2020). Following the previous opinions, the efficiency takes place at the level of each component and comes with a series of changes on both sides.

The two parties directly involved in the online educational process, teachers and students, have different implications, even if their purpose is common, namely teaching - learning. On the one hand, teachers need to focus their efforts on both the learning process and the creation of useful tools, and not only that, but on the other hand, students, who must have skills to access them (King & Boyatt, 2014). The same study states that the demand for online education is undergoing serious changes, depending on the benefit realized by consumers.

Given the importance of all parties involved in the educational process, it is easy to understand that one plays a significant role, and this is the part of the beneficiaries, ie the students, and the effort of the other elements must be focused on them. Khan et al. (2017) demonstrates the links between the parties involved and points out that barriers may arise at the time of their link, most often in relation to communication. At the same time, we can think that these barriers can influence the relationship of the elements on several levels, either in terms of the purpose of the learning process or the quality of the other services offered, with valuable repercussions on the procurement process.

In order to test the actions and consequences produced by online education, we ordered the research of the direct beneficiaries, the students.

#### **4. Quantitative research on changes in e-learning on the educational product**

##### **Identify the decision-making problem and the purpose of the research**

In today's context, where education takes place largely online, determining the elements behind changing the demand for university education is becoming the key to success for the bidding institution.

The aim of the research is to study the impact of technology on the purchasing behavior of a university educational product, in the current circumstances of online education.

Identify objectives and assumptions

##### **At the level of research objectives, I decided that these should be the following:**

- Determining the extent to which students, as beneficiaries of education, are adapting their needs to online education;
- Determining the degree of influence of the Internet in the decision to purchase the university product;

- Identify the purchase decision in different conditions of the university product.

**At the level of hypotheses, the research starts from the following assumptions:**

- The decision to acquire the majority of respondents is based on online information;
- Most of the respondents would buy the university product regardless of whether it is online or not;
- Social networks have a minor influence for students in the decision to purchase the university product;
- Female respondents adapt more easily to the transition from online education;
- Former graduates, who recommend the university product, have a high degree of confidence;
- From the educational marketing mix, in the case of online education, the price has a big impact on the purchasing decision.

**Estimating the value obtained from information and choosing the sources of information**

After research, it is estimated that, due to the accuracy and relevance of the data, it is possible to determine the degree of change in demand for university products by comparing online and physical education programs. At the same time, the results of this research are expected to highlight the pros and cons of online education.

Based on the aforementioned objectives, I decided that the source of information should be external and primary, directly from the beneficiaries of the university education process and also holders of the final acquisition decision.

**Selecting ways to collect and systematize information**

The research method is based on addressing a questionnaire to the respondents, a questionnaire that includes 7 questions related to the research objectives. Regarding the way of conducting the research, it had as virtual means of application the virtual environment. The research took place over a period of 7 days, between February 15-22, 2021, and the source of data collection was represented by current students of The Bucharest University of Economic Studies.

### **Research coordinates and sample size**

Given the research resources and the number of respondents given by the following formula, we used its narrow meaning (250 respondents), starting from the current number of students of the Academy of Economic Studies (ASE, 2019) 22,845, which, calculated as a representative number is 901 students.

$$\text{Sample size formula} = \frac{\frac{z^2 * p(1 - p)}{e^2}}{1 + \left(\frac{z^2 * p(1 - p)}{e^2 * N}\right)}$$

Where:

N = population size

z = confidence level

e = margin of error

p = standard deviation

When determining the sample size, the 95% probability of a guaranteed result (t = 1,96) and the error range of ± 3,2% shall be taken into account when determining the sample size.

### **Information processing, analysis and interpretation**

The first research hypothesis concerns the ways in which students are informed, and as can be seen in Figure 2, they prefer to do it online, because it is more convenient for them. At the same time, another reason for this choice is the existence of more detailed information in electronic format and, another aspect, of particular importance is the presence of other consumers, with the same characteristics as theirs or even those who bought the university product and can provide relevant information. As the frequency shows, 79.6% of respondents prefer to find out in the online environment about the study programs they are going to purchase.

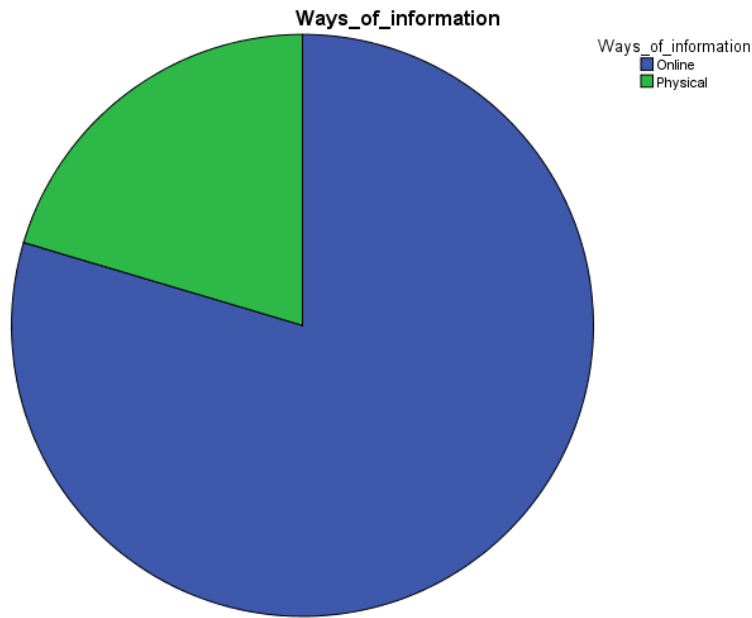


Fig. 2. Graphic representation of respondents' preferred means of information

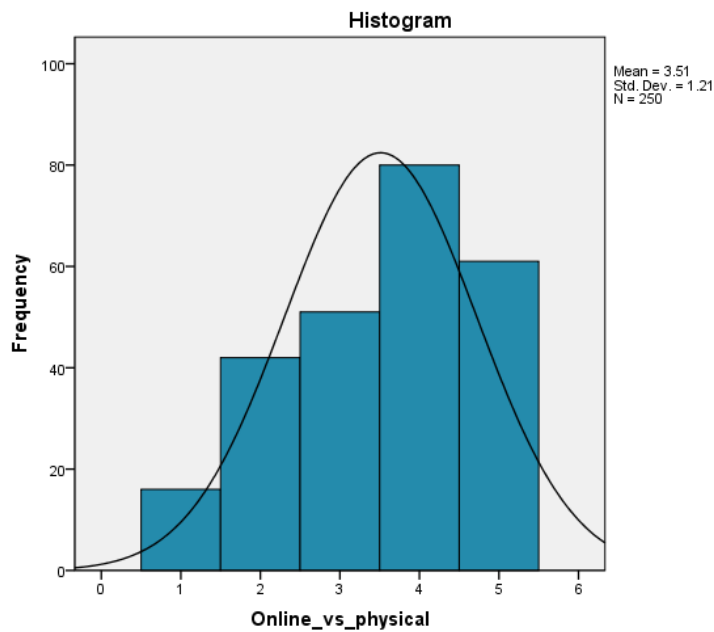


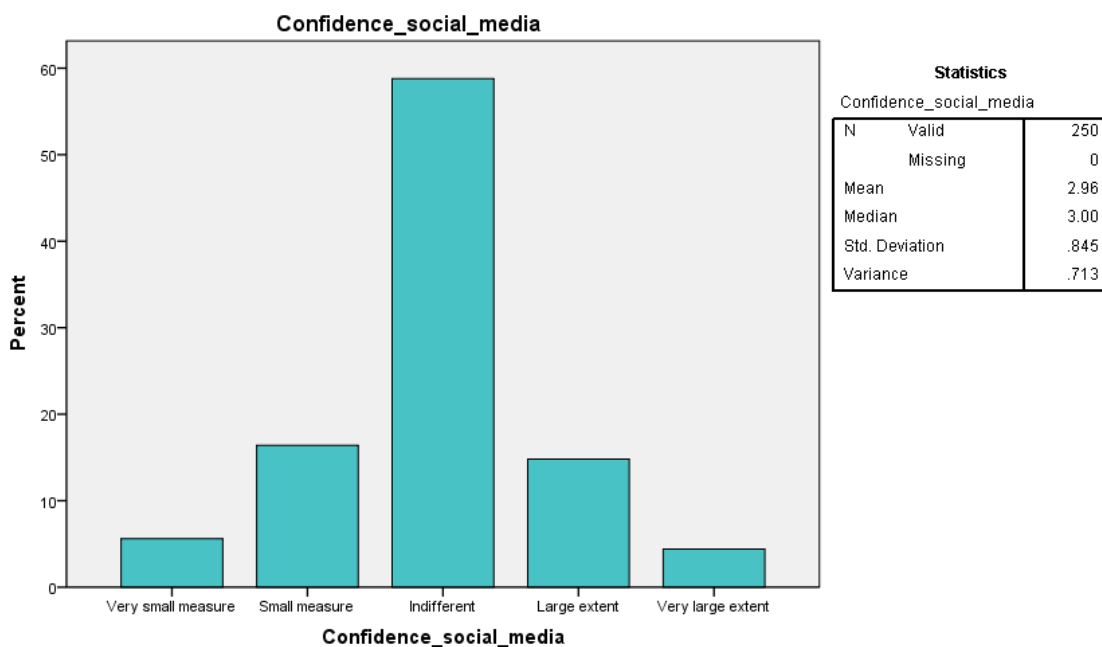
Fig. 3. Purchase preferences for online courses



In order to test the second research hypothesis, I ordered its verification by asking the respondents in a comparative way, if they would purchase the university product with teaching exclusively online, and most of them stated, on a scale of 1 -5 that to a large extent would agree with the acquisition even in this way. The standard deviation, as expressed in Figure 3, with a value of 1.21, shows that the deviation from the normal distribution has relatively small values, therefore the values of the data set are very close to the average value.

The third hypothesis of the research places social networks as a factor of major importance in the acquisition process, and thinking about it is based on the fact that most respondents are present on social networks to a large extent. However, the result shows that at the time of purchase, they do not consider social networks relevant, either in terms of the content that the universities distribute there, or even in terms of those who can inform them through them, as we see in Figure 4, they consider the information there to be on average relevant.

As can be seen in Figure 5, after analysis, hypothesis number 4, female respondents prefer online courses to a greater extent, but between variables, as shown by the Pearson Chi-Square correlation coefficient, there is a link direct and positive, with low intensity, therefore, both sexes react almost similarly when choosing the university product.



**Fig. 4.** Trust in social networks

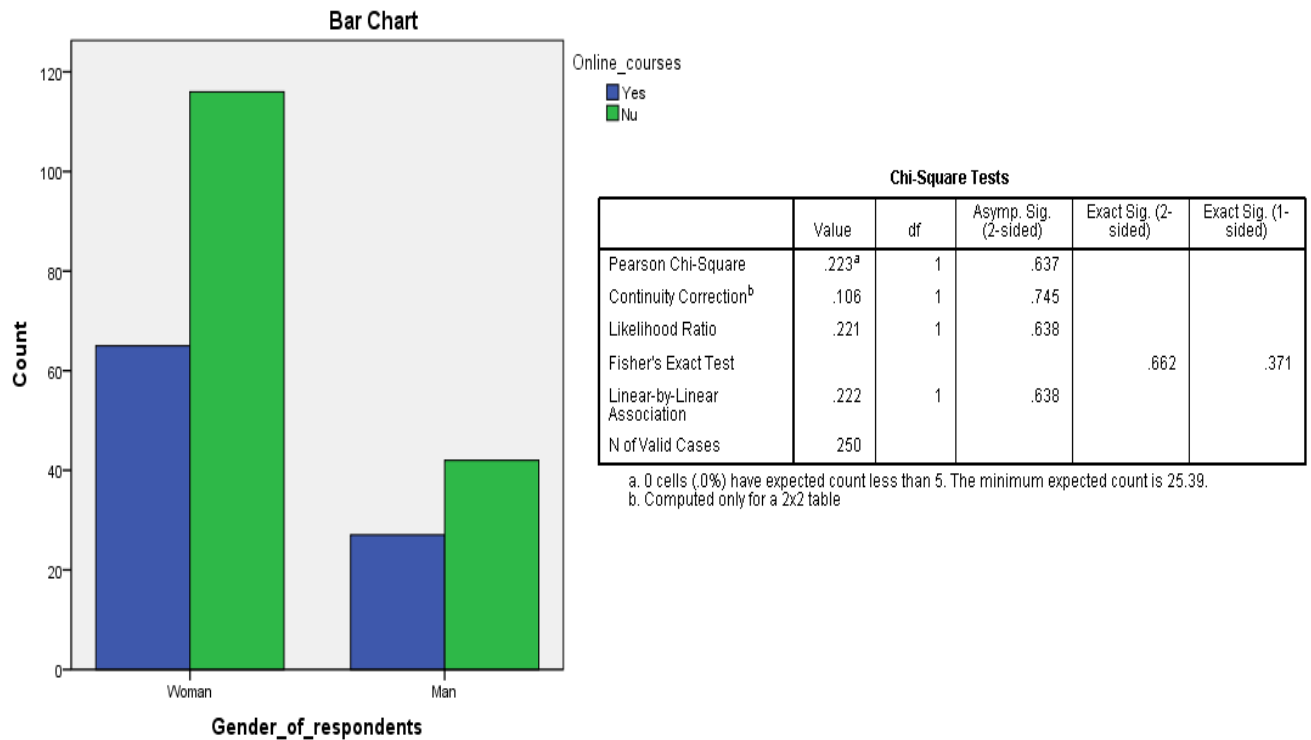


Fig. 5. Online course preferences by gender

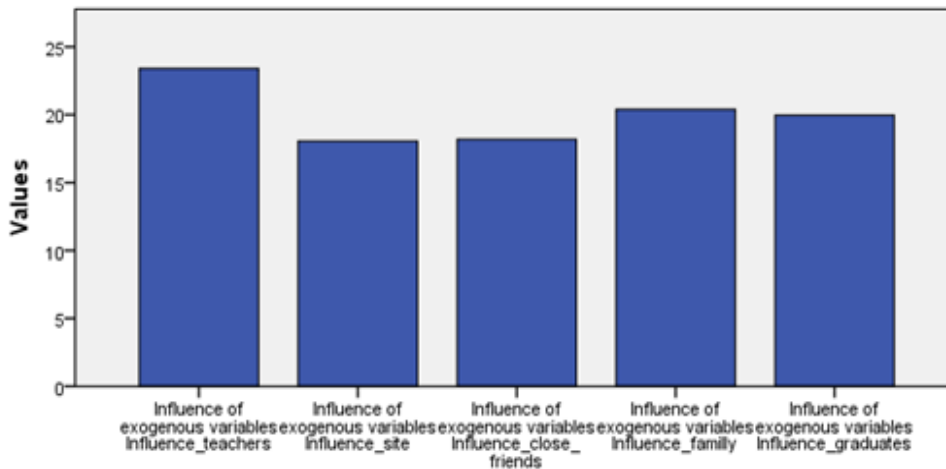
According to the results, as we see in Figure 6, they have a relatively average share of importance for respondents, out of a total, 20% mentioned that they trust former students when choosing the university product. Out of the 5 possible variants, the variant under test obtains the 3rd place in the respondents' preferences, most likely the basis of this choice being the experience that the graduates have already gone through. At the same time, the element that is the subject of this article, namely the internet, seems to have a slight loss to the detriment of the others, only 18.1% of respondents declaring that they would trust, when informing about the university product on the faculty website.

**\$Influence Frequencies**

		Responses		Percent of Cases
		N	Percent	
Influence of exogenous variables <sup>a</sup>	Influence_teachers	171	23.4%	68.4%
	Influence_site	132	18.1%	52.8%
	Influence_close_friends	133	18.2%	53.2%
	Influence_familly	149	20.4%	59.6%
	Influence_graduates	146	20.0%	58.4%
Total		731	100.0%	292.4%

a. Dichotomy group tabulated at value 1.

**\$Influence Frequencies  
Responses Percent**



**Fig. 6.** Social influences on acquisition

The last research hypothesis, we decided to be of a qualitative nature, in order to obtain the most relevant information, therefore, we asked the respondents what would change in online education, referring to the physical one. Among the most mentioned answers were the modification of the syllabus and the didactic content, the modification of the hours and the improvement of the platforms that the faculties use, but, as the hypothesis assumed, the tuition fee is the most specified answer of all.

## **5. Conclusion**

Changing the demand for higher education in the current context of online education may be the cause of the changes offered by the internet. As can be seen in the results section, most of the respondents state that they would purchase the product, but the rest, albeit to a lesser extent, do not agree. This makes it possible to reduce the demand as a result of the transition from online to physical education. Another hypothesis shows that current students are already accustomed to online education, most of them agreeing with the purchase of any type of university product. I have researched and adapted these consumers according to their gender, regarding online education and the results have shown that there is no significant difference, and the purchase of the product would not undergo significant changes from this perspective. At the same time, I noticed that the influence of university or high school staff (professors) on the purchasing decision has a high degree of applicability, although the information is rather online. This leads us to deduce that the long-standing trust they have gained in their teachers is more relevant than the unverified and inexperienced information on the internet. The latest research hypothesis shows that in the case of online education, the elements of the marketing mix have changed their place in the minds of students. I noticed that the price became the key factor, compared to the period when the promotion was much more valuable. It is clear that they (consumers) do not feel the benefits of an educational program in physical format and want to reduce the costs of purchase, and the product to adapt both in terms of content and delivery, more precisely, the distribution also receives an important role in the new hierarchy.

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