

Disruption Caused by the COVID-19 Pandemic in Peruvian University Education

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Abstract

The objective of the research was to analyze the effects of the disruption that Peruvian university education has suffered due to COVID-19 in 2020. The type of research was basic under the design of grounded theory (De la Espriella & Gómez Restrepo, 2020). The study scenario was university education in the first semester of 2020, considering more than twenty academic texts; between articles, texts and reports related to university educational disruption. The technique implemented was that of documentary analysis. And in the procedure for collecting information, the inclusion and exclusion criteria were taken into account. The results show that disruption is the break, abrupt or sudden interruption caused within a current paradigm. Therefore, the paradigm of face-to-face Peruvian university education due to the COVID-19 pandemic has suffered a sudden interruption; so much so that article 47 of University Law N° 30220 was modified; The modalities of face-to-face, semi-face-to-face and distance or non-face-to-face teaching were established, introducing university higher education in the new paradigm of online education. For this reason, universities should be required to leave their comfort zone and incorporate information and communication technologies as a possibility and opportunity for academic development.

Keywords: analysis, disruption, COVID-19, university education

1. Introduction

The term *disruption* is a feminine noun that means 'breakage or abrupt interruption' (Real Academia Española, 2014). Worldwide, the impact caused by the coronavirus on education is being monitored by UNESCO. It is estimated that 91.3% of the world's population will close their schools and universities faced with this new context, the disruptive situation led to the implementation of online support training mechanisms for teachers and students.

It could be said that COVID-19 introduced a disruption or abrupt interruption in face-to-face university education. In 2020, COVID-19 broke with the established annual period in face-to-face university education. In the case of Peru, face-to-face university education was interrupted by emergency decree No. 026-2020; the Peruvian State dictated the various exceptional and temporary measures to prevent the spread of the new coronavirus throughout the country. Suddenly, without preparation or notice, the suspension of classes and academic activities at the university level throughout the country.

Etymologically, the term *disruption* comes from the Latin *disruptio, onis* ('fracture, break') formed by *disruptus, a, um* ('broken, broken, steep'), which is the past participle of the verb *dirumpo or dirumpo, dirumpere* ('to break, smash, destroy'). When it passes in the 17th century to the English language it does not suffer much modification, it is maintained as *disruption*, which means 'forced or forceful separation of something into parts', 'a radical and abrupt change', 'to interrupt or stop avoiding the normal continuity, or destroying forms of doing something' (Salva, 1868). And by passing from Latin to Spanish it kept its meaning.

Therefore, we would say that university education has suffered in 2020 a fracture and a break in its paradigm of face-to-face education or, if we stick to the meaning in English, we would say that face-to-face university education

has suffered a cut in its established paradigm. In addition, in 2020, the normal development of its administrative processes has been interrupted due to the presence of the COVID-19.

2. Disruption and Paradigm

Although it may not seem transcendent, it is worth noting the difference between *paradigm and disruption*. The term paradigm, coined by Thomas S. Kuhn (2006), refers to model, archetype, example. And as Pilonieta (2017: 58) points out, the paradigm "is forceful and transformative", "it is a world of new possibilities". Examples: industrialization, capitalism, relativity, quantum, etc. For its part, the disruption is the cut, the interruption of the current model. The destruction of the established paradigm. In the case of Peruvian university education, the paradigm of the basic conditions of quality, promoted by Sunedu, Minedu and the Peruvian State, was interrupted. The interruption of face-to-face university education due to the COVID-19 pandemic was evidenced by Vice-Ministerial Resolution No. 095-2020-MINEDU, which suspended and postponed face-to-face classes and opted for remote or non-face-to-face service.

2.1 Disruption and Face-to-Face University Education

The University Law (Law No. 30220) established that "undergraduate distance learning should not exceed 50% of the credits. And the master's and doctorate should not be taught exclusively in this modality". Given the suspension of face-to-face classes, and seeing that the isolation was prolonged, by means of legislative decree no. 1496, article 47 of the University

Law was modified and the modality of study was established as "face-to-face, semi-face-to-face and distance or non-face-to-face", in such a way that a disruption, a rupture, was introduced in the model proposed by the law, and a change was established that was not transitory, but permanent, in university education. This situation led the National Superintendence of Higher University Education to establish the basic quality conditions for the authorization of programs under the blended and distance modalities.

2.2 Disruption in Knowledge of Competency-Based Education

At the end of the 20th century, Toffler (1991) warned us that we had "entered the age of knowledge". And that it was the most important of all (Toffler & Toffler, 1995). On the other hand, Aguerrondo (1999), pointed out the need for a new educational paradigm for the 21st century, which -we would say- found its foundation in Jacques Delors' proposal (1996): learning to know, learning to do, learning to live together and learning to be, from which the "educational model based on competences became important and necessary" (García Retana, 2011).

This is how it was established in the Peruvian university education system of face-to-face teaching, whose disruption is a fact that has hit the teaching of face-to-face classes worldwide. Thus, the obligation to adapt, to change the schedule of classes, meetings, coordination, etc. arises.

Added to the global pandemic of COVID-19, as already pointed out by Pilonieta (2017), advances in the field of cognitive neuroscience, as well as in electronic systems, networks, simulators, computing and information technology, have allowed us to move from the simple notion of a tool (from the computational) to a virtual platform, which has come to personalize learning. In this way, the new educational paradigm "online education" has been positioned (Abreu, 2020).

Peru was not prepared for this change in paradigm; the disruption caused by COVID-19 has shown that of 45 (100%) state universities licensed by Sunedu and which met the basic conditions of quality, only 26 (58%) began classes virtually; 19 (42%) were unable to begin classes (As Perú, 2020). This gives us certainty that the licensed state university organizations had only focused on physical infrastructure and face-to-face classes; their educational offerings did not respond to international demands for connectivity, use of virtual platforms and online classes; the disruption generated by the COVID-19 pandemic has forced them to "move out of the comfort zone" (Forés Miravalles, Sánchez i Valero, & Sancho Gil, 2014) and has required them to adapt to the new educational paradigm "online education".

2.3 Disruption and Online University Education

The disruption caused by COVID-19 has led universities and academics to see the development of synchronous and asynchronous communication in the classroom (Gerardo Jacinto, Garza Martínez, Luna Peña, & Barrientos González, 2014), and changed the perspective of teachers and students on virtual learning environments (Quesada Pacheco, 2017), generated effects on online communication styles in an asynchronous and synchronous manner, in order to learn the basic terms of the market in a virtual environment (Rubiano Díaz, 2015), and made information

and communication technologies (ICT) in university education an experience of innovation (Ricardo Barreto & Iriarte Diazgranados, 2017). This is a fact that many teachers and professionals in university education have managed to see disruption as a possibility and opportunity. But some have also seen that disruption is synonymous with problems.

2.4 Disruptive Innovation in University Education

It emerges as a response to the constant change in student interest, the established system and the desire to conquer new market niches. Disruptive innovation creates new marketing and business management strategies. It seeks success and encourages creativity in the goods and services offered, mediated by the use of technology (Varón-Serna, Frasca-Rodríguez, Gamboa-Andrade, Benavides Sánchez, & Vargas Polanco, 2017). In the field of university education, innovation has introduced MOOCs (massive online open courses), which are the most inexorable disruptive innovation facing the university today. These are courses to promote connectivity between students and universities.

It is a form of online learning-teaching. In other words, distance learning through a computer tool and the Internet (Acevedo Tarazona, 2015). It can present disadvantages, uncertainty or failures, so the value of the product or service must be clearly defined, match skills, technologies, resources, see prices, evaluate costs and determine the new disruptive element (Corichi García, Pérez García, Pérez Enzastiga, & Valencia Sandoval, 2018). Also, "virtual learning platforms" have been introduced (Otero Escobar, 2017) for free and paid use.

2.5 Disruptive Technology in University Education

The concept of disruptive technology was theorized by Clayton M. Christensen and Joseph Bower in the article *Disruptive Technologies: Catching the Wave* (1995), and in their book *The Innovator's Dilemma* (1997), describes in depth disruptive innovation by considering technologies as inherently disruptive (Veiga, 2016). Broadly speaking, technologies can be classified as low performance and new market and sustainable technologies.

In the first case, consumers are not very demanding, but they consider that it should be progressively improved. An example of this would be the various applications of Google on smart phones. And that of sustainable technologies where they seek to change existing technology. An example of this would be the applications of Apple mobiles. And that both technological advances have allowed students, during the COVID-19 pandemic lockdown, to be connected to their online classes as a viable and feasible alternative because of the disruption experienced in college education.

2.6 Digital Disruption and Teaching Strategies

In exploring disruptive technology in teaching, Vratulis, Clarke, Hoban, & Erickson (2011) found that teachers liked to use new technological tools in the learning phase, but in the end very few used them as part of their teaching strategy. It is a real challenge to introduce disruptive teaching strategies because, as referred to by Varón-Serna, Frasca-Rodríguez, Gamboa-Andrade, Benavides Sánchez, & Vargas Polanco (2017), without going back many years, there was only one computer in each house, under the concept of the computer as a family device (but not as an individual) with a limited internet connection.

This situation meant that one was not always permanently connected to the web through the computer, but rather at certain times of the day because it was shared. This is radically opposed to what is happening today, in which we are constantly connected through mobile devices such as laptops, tablets and smart phones, regardless of location or time.

2.7 Disruption and Research in a University Experience

One case in particular is at the Universidad Cesar Vallejo. The University Law, in its article 47, established that "the title, the degree of master and doctor is granted by means of the approval of a thesis or research work", and the vice-rectorate of research of the UCV for 2020 approved "the guide for the elaboration of research work and thesis for the obtaining of academic degrees and professional titles", guidelines that seemed to be modified by the unexpected irruption of the COVID-19 in the country. However, the organizational, institutional and technological change, under the actor-network perspective (Gutiérrez Rincón, Aguilar Zambrano, & Medina Vásquez, 2019), generated, through the use of the Trilce, Clementina, Blackboard Learn+ and the Virtual Library, a response to the limits of the disruption caused by the COVID-19 in the research and academic field (Rivera-Vargas, Sancho-Gil, & Sánchez, 2017).

Research teachers are required to know the Internet and virtual platforms as support tools for the construction of knowledge in 4.0 (Martin Garin, Millán García, Sala Lizarraga, Hidalgo Betanzos, & Bañi, 2018), to master qualitative research strategies (Vasilachis de Gialdino, 2019), to review the technological resources present in

industry 4.0 (Rozo-García, 2020), and above all, to begin to see information and computing in the context of the university of the 21st century (Alonso-Arévalo & Saraiva, 2020).

3. Method

The type of research was basic (Gabriel-Ortega, 2017), under the design of the grounded theory (De la Espriella & Gómez Restrepo, 2020). The study scenario considered in the study is university education in the first semester of 2020. More than twenty academic texts were reviewed in the study, including articles, texts and reports related to university educational disruption. Therefore, the technique implemented was that of documentary analysis. And the procedure followed was the collection of information through the criterion of inclusion and exclusion. Theoretical reconstructions, logical consistency, credibility and coherence of interpretation were considered as part of scientific rigor and ethical principles.

4. Discussion

The disruption caused by the pandemic of the COVID-19 in the university education; takes us to see, as Furqan, Fatima, & Awan (2020), that the tele-education in the post-COVID-19 period, will be a new normality, for being a vital, profitable and efficient educational tool. And that the Peruvian universities by legal disposition will have to implement if they want to be in agreement with the international exigencies. Because with the COVID-19 it has gone from traditional education and literacy to the use of devices for inter-learning (Bravo Mancero, Larrea Naranjo, Ruales Parreño, & Fernando Cruz, 2020).

It is known that, during the pandemic, the advance of technologies has allowed connectivity, continuity of classes, and it has been possible to realize digital education seriously and the right to education in time of the coronavirus (Cotino Hueso, 2020), promoting the need for change towards digital skills and computer thinking, because digital education has been the lifeline to guarantee the right to education in a situation like the pandemic.

Finally, digital competencies have become a challenge for teachers and students in virtual education, derived from COVID-19 (Martínez Garcés & Garcés-Fuenmayor, 2020), a development requirement because it has become evident as a weakness in the majority of teachers and university students. If necessary, we want to take advantage of the opportunities offered by the new paradigm of online education.

5. Conclusion

The results show that disruption is the breakage, sudden interruption caused within an existing paradigm. As a result, the paradigm of face-to-face university education in Peru due to the COVID-19 pandemic has been abruptly interrupted, so much so that it has required the modification of Article 47 of the University Law, and the modalities of face-to-face, blended and distance or non-face-to-face teaching have been established. The new paradigm of online education has been introduced to university higher education. Universities are required to leave their comfort zone and incorporate information and communication technologies as a possibility and opportunity for academic development, which is no longer only an academic requirement, but also a legal one, since the National Superintendence of Higher University Education (Sunedu) has established the basic quality conditions for the authorization of programs under the blended and distance modalities.

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