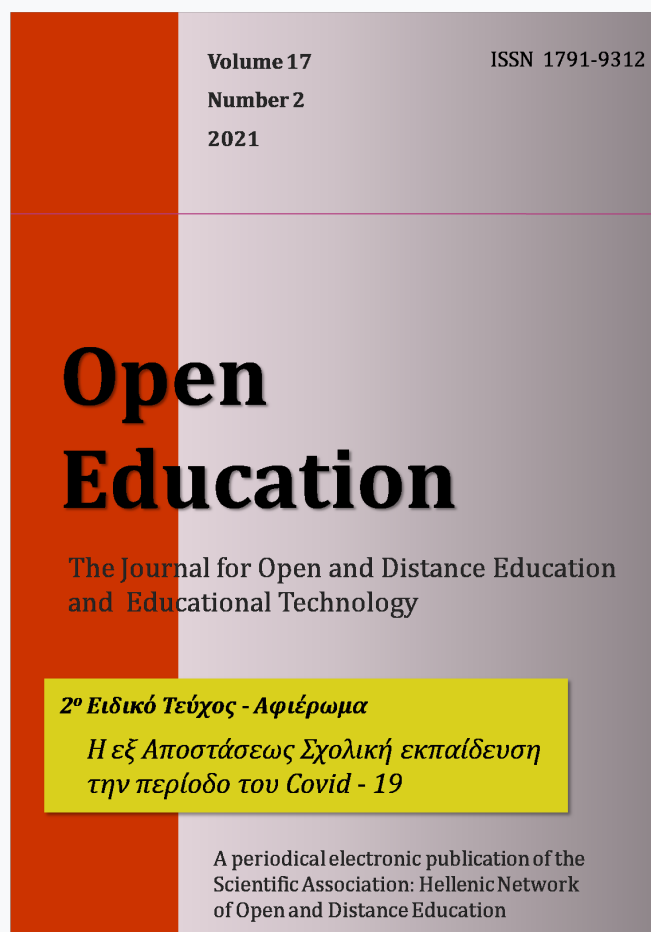


## Ανοικτή Εκπαίδευση: το περιοδικό για την Ανοικτή και εξ Αποστάσεως Εκπαίδευση και την Εκπαιδευτική Τεχνολογία

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### Elements of unfairness in e-learning distance higher education in covid-19 era

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### Βιβλιογραφική αναφορά:

## Elements of unfairness in e-learning distance higher education in covid-19 era

### Στοιχεία απουσίας δικαιοσύνης στην τριτοβάθμια διαδικτυακή εξ αποστάσεως εκπαίδευση κατά την εποχή της πανδημίας του covid-19

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## Abstract

Undoubtfully in covid-19 era one of the sectors seriously affected is that of education. More specifically, an issue widely discussed is that of the form of education offered to the interested parties under the new circumstances. Worldwide, at all levels of education (primary, secondary and tertiary), both educators and learners were forced by the exogenous factor of pandemic, not only to work at distance from their educational institution, but also to adjust in e-learning educational procedures in a very short time. Focusing on tertiary education, this rapid unavoidable change brought forward several educational issues and dysfunctions, as these are revealed from researchers' publications. Though these issues and concerns are related to issues of unfairness, nevertheless this has not been pinpointed in literature. Thus, the aim of this paper is to identify which elements of unfairness are raised due to the constraints and dysfunctions occurred from the sudden change from face-to-face to online distance learning. For these purpose 16related papers are critical reviewed. The results showed unfairness elements across countries, within countries, among universities, within universities and among students have been identified. More over two elements of unfairness have a horizontal impact in tertiary education since the beginning of the pandemic era. These unfairness issues highlighted seem that will engage the tertiary educational community and educational community in general, since distance education may become a dominant form of education in the near future. Thus, issues and concerns of fairness at distance education need to come to the proscenium.

## Keywords

pandemic, online distance education, equity, justice, literature review, Equity Theory and Rawl's Theory of Justice

## Περίληψη

Αναμφίβολα στην εποχή της πανδημίας του covid-19 ένας από τους τομείς που έχουν επηρεαστεί ιδιαίτερα είναι ο τομέας της εκπαίδευσης. Πιο συγκεκριμένα, ένα θέμα που συζητείται ευρέως είναι αυτό της μορφής εκπαίδευσης που προσφέρεται στους εμπλεκόμενους υπό τις νέες συνθήκες που διαμορφώθηκαν. Σε όλο τον κόσμο και σε όλα τα επίπεδα εκπαίδευσης (πρωτοβάθμια, δευτεροβάθμια και τριτοβάθμια), τόσο οι εκπαιδευτικοί όσο και οι εκπαιδευόμενοι αναγκάστηκαν από τον εξωγενή παράγοντα της πανδημίας, όχι μόνο να εργαστούν σε απόσταση από το εκπαιδευτικό τους ίδρυμα, αλλά και να προσαρμοστούν σε νέες εκπαιδευτικές διαδικασίες εξ αποστάσεως ηλεκτρονικής μάθησης σε πολύ σύντομο χρονικό διάστημα. Εστιάζοντας στην τριτοβάθμια εκπαίδευση, αυτή η ταχεία αναπόφευκτη αλλαγή προκάλεσε ποικίλα εκπαιδευτικά ζητήματα και δυσλειτουργίες, καθώς αυτά αναδεικνύονται και από τις σχετικές επιστημονικές δημοσιεύσεις. Μέσα από αυτά αναδεικνύονται θέματα απουσίας δικαιοσύνης μεταξύ των ενδιαφερομένων, κάτι που μέχρι σήμερα δεν έχει επισημανθεί ιδιαίτερα στη βιβλιογραφία. Στη βάση αυτή, σκοπός της εργασίας ήταν να εντοπίσει ποια στοιχεία αδικίας ανακύπτουν λόγω των περιορισμών και των δυσλειτουργιών που προέκυψαν από το ξαφνικό πέρας από την πρόσωπο-με-πρόσωπο εκπαίδευση στη διαδικτυακή εξ αποστάσεως εκπαίδευση. Για τον σκοπό πραγματοποιήθηκε ανασκόπηση σε 16 ερευνητικές εργασίες στις οποίες εντοπίζονται προβλήματα και δυσλειτουργίες στη διαδικτυακή εξ αποστάσεως εκπαίδευση. Στη συνέχεια, έγινε κατηγοριοποίηση των στοιχείων απουσίας δικαιοσύνης τα οποία απορρέουν από τις δυσλειτουργίες αυτές. Τα αποτελέσματα έδειξαν στοιχεία απουσίας δικαιοσύνης μεταξύ χωρών, εντός χωρών, μεταξύ πανεπιστημίων, εντός πανεπιστημίων και μεταξύ φοιτητών. Επιπλέον, αναδείχθηκαν δύο ζητήματα απουσίας δικαιοσύνης, αυτό του περιορισμού των μετακινήσεων και αυτό της απουσίας διαπροσωπικής επαφής τα οποία έχουν οριζόντιο αντίκτυπο στην τριτοβάθμια εκπαίδευση από την αρχή της πανδημίας. Τα ζητήματα απουσίας δικαιοσύνης που επισημαίνονται στην παρούσα εργασία φαίνεται ότι θα προσελκύσουν το ενδιαφέρον της τριτοβάθμιας εκπαιδευτικής κοινότητας και της εκπαιδευτικής κοινότητας γενικά, καθώς η εξ αποστάσεως εκπαίδευση ενδέχεται να αναδειχθεί σε κυρίαρχη μορφή εκπαίδευσης στο εγγύς μέλλον. Επομένως, τα ζητήματα δικαιοσύνης στην εξ αποστάσεως εκπαίδευση πρέπει να έρθουν στο προσκήνιο.

## Λέξεις-κλειδιά

πανδημία, διαδικτυακή εξ αποστάσεως εκπαίδευση, ισότητα, δικαιοσύνη, βιβλιογραφική ανασκόπηση, Θεωρία Ισότητας, Θεωρία Δικαιοσύνης του Rawls

## Introduction

The Director General of the World Health Organization at 11th of March 2020 characterized Covid 19 as a pandemic and called countries to 'take urgent and aggressive action' (WHO, 2020). The 'alarm bell', as referred, signaled the need societies to turn and adopt alternative procedures in all the sectors in order human contact to be confined to the maximum possible level. Regarding educational sector, that 'alarm bell' signaled the almost instant passing from face-to-face educational systems to e-learning educational procedures. The estimates of UNESCO for tertiary education reveal the size of the impact of pandemic in the sector, since more than 1,5 billion of learners in 165 countries were left away from their academic institutions (United Nations, 2020). In Europe specifically, almost all universities were obliged to

immediate closure and turn to online courses (European Commission, 2020). The face-to-face (traditional in class) procedure turned instantly to online education procedures (Bao, 2020).

It was inevitable this dramatic change to result in the production of a wide range of research papers analyzing the new framework posed to the academic society and its impacts. Most of these articles are country focused in the sense that they are based on the measures taken within a specific country (Coman et al., 2020, Heng & Sol, 2020; el Firdoussi et al., 2020). Some are based on questionnaires investigating the views developed within the academic society (i.e. Coman et al., 2020; el Firdoussi et al., 2020; Yilmaz Ince et al., 2020), while other are focusing on specific scientific sectors such as medical schools education (Gupta et al., 2020) or business schools (Brammer & Clark, 2020). Finally, other papers are referred to general issues arising in the academic community during the covid-19 era (i.e. Dubey and Pandey, 2020; Bao, 2020). Whatever the case, it is generally accepted that most of the academic institutions were unprepared to deal with the new situation formed in covid-19 era either due to lack of infrastructure or either due to academic staff or student unpreparedness or either to all these reasons combined. Moreover, it is argued that the unpreparedness of the universities creates disadvantages that seem to outweigh the benefits of the online learning (Coman et al., 2020), while Roache et al. (2020) refer to the challenges brought up during the pandemic for Higher Education Institutions.

The common ground of all the related literature, regardless whether the authors stand more or less in favor either to the face-to-face or to online procedures, is the effort to highlight the dysfunctions, the potential future measures and the opportunities generated for tertiary education after the outbreak of the pandemic. It is of most interest that academic institutions, while coping to respond to the unforeseen situation created, at the same time, they need to keep fundamental principles of education, desirable ones both in life and in science, such as those of integrity, equity, inclusiveness, fairness, ethics and safety (Gupta et al., 2020). From the above principles, equity and fairness are the two ones on which this paper will focus on.

Fairness and equity are concepts that are often used interchangeably in literature. In particular, for some researchers, fairness and equity have identical meaning (Konow, 2003; Soltau, 2008), while others consider fairness as a broader term than that of equity (Rose et al., 2008). Moreover, fairness is also used interchangeably with justice. However, justice is related to the notion of what someone gets ensuring that each one will receive what he or she deserves (Velasquez et al., 2018), while fairness is related to the notion of judging fairly with no influence from feelings or interests. In addition, there is a significant overlap between the meaning potential of the three concepts (Ericksson et al., 2017).

Many theories have been developed regarding these three concepts (Ericksson et al., 2017). Among them, two fundamental ones are those of the Equity Theory and Rawls's Theory of Justice. More specifically, according to the Theory of Equity, available resources should be distributed based on the contribution of each interested party in the production of the resources (Conlon et al., 2004). In order to determine the contribution of each party, different criteria of equity are referred in the related literature. Rose et al. (1998) propose three basic different categories of equity rules: (i) rules for the initial allocation of the resources, (ii) outcome-based rules that are related to the final result of the distribution and, finally, (iii) equity rules related to the procedure of distribution. Sovereignty, egalitarian, ability to pay, are some of the rules of the Theory of Equity for the distribution of the resources. Furthermore, the Theory of Justice, presented by John Rawls in 1971, is based on two basic principles.

According to the First Principle, 'each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all'. The Second Principle argues that 'Social and economic inequalities are to be arranged so that they are both: (a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and (b) attached to offices and positions open to all under conditions of fair equality of opportunity' (Rawls, 1999, p. 266).

The first research question raised at this point is why these concepts and theories matter in tertiary education. Furthermore, the second research question is why are they discussed in a paper regarding tertiary education during the covid-19 era?

Concerning the first question, it should be noted that, before the covid-19 era, two of the main issues regarded tertiary education were the following. The first one was, and still is, the issue of access to tertiary education and the second was, and still is, that of distributive justice when the discussion comes to the distribution of the available resources. In particular, the importance of access in tertiary education is highlighted in literature (World Bank, 2006; Dura-Bellat & Gajdos, 2012; Salmi & Bassett, 2012; Boyum, 2014). As Meyer et al. (2013) argue, if many young people are unable to access tertiary education, then that results in a 'crisis of justice' (Meyer et al., 2013, as referred to Hughes, 2013, p.3). Additionally, Salmi and Bassett (2012) state that 'given the extensive social and private benefits that result from tertiary education, inclusive access and success are essential for achieving social justice' (p.5), while, they also set the question 'how equity in access and persistence in tertiary education promotes justice as fairness' (p. 6).

Concerning the second question, the sudden passing from face-to-face to online distance learning in tertiary education, on the one hand created opportunities, yet, on the other hand, brought constraints and dysfunctions. Focusing on the latter, namely constraints and dysfunctions, it seems that issues of unfairness are revealed in tertiary education through covid-19 era. However, even though there is a wide reference to them in the existing literature, these have not been studied from the point of view of fairness and issues of potential unfairness raised among the interested parties, namely the aggregate academic community. Based on this, the aim of this paper was to investigate through critical literature review potential unfairness elements stemming from the constraints and the dysfunctions of the online distance learning in tertiary education in covid-19 era.

## **Methodology**

Literature review was conducted through electronic databases such as Google scholar, ResearchGate, and Academia Edu. Indicative key words used for this search mainly in combination with each other were: tertiary education, covid-19 era, higher education, e-learning, distance learning, pandemic, fairness, equity. The analysis has been focused in 16 articles selected in accordance to their relevance to the issue investigated. These articles were examined exclusively in terms of the constraints and the dysfunctions of adopting online procedures in tertiary education during the covid-19 period. These 16 articles were diversified among each other in the following sense: 1) They were referring to tertiary educational systems of different countries worldwide. 2) They have had various and different methodological approaches. For example, in some, the analysis was based on statistical analysis of questionnaires, others on literature review. 3) The content of some articles was more general (i.e. general dysfunctions or opportunities of e-learning in covid-19 era), while that of others more specific oriented (i.e. student preparedness).



**Table 1: The articles reviewed**

A/A	PAPER
1	Adedoyin, O. A., & Emrah Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. <i>Interactive Learning Environments</i> , review article, 1-13. DOI:10.1080/10494820.2020.1813180.
2	Ahlburg, D. A. (2020). Covid-19 and UK Universities. <i>The Political Quarterly</i> , 91(3), 649-654. <a href="https://doi.org/10.1111/1467-923X.12867">https://doi.org/10.1111/1467-923X.12867</a>
3	Brammer, S., & Clark, T. (2020). COVID-19 and management education: reflections on challenges, opportunities, and potential futures. <i>British Journal of Management</i> , 31, 453-456. DOI: 10.1111/1467-8551.12425
4	Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. <i>Human Behavior &amp; Emerging Technologies</i> , 2, 113-115. <a href="https://doi.org/10.1002/hbe2.191">https://doi.org/10.1002/hbe2.191</a>
5	Chandasiri, O. (2020). The COVID-19: impact on education. <i>International Journal of Advanced Education and Research</i> , 5(3), 13-14.
6	Coman, C., Tîru, L., G., Mesesan-Schmitz, L., Stanciu, C., & Bularca, M.C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: students' perspective. <i>Sustainability</i> , 12(24), 1-24. <a href="https://doi.org/10.3390/su122410367">https://doi.org/10.3390/su122410367</a>
7	Dawadi, S., Giri, R., & Simkhada, P. (2020). Impact of COVID-19 on the education sector in Nepal - Challenges and coping strategies. Sage Submissions. Preprint. Available at <a href="https://doi.org/10.31124/advance.12344336">https://doi.org/10.31124/advance.12344336</a> .
8	Dubey, P., & Pandey, D. (2020). Distance learning in higher education during pandemic: challenges and opportunities. <i>The International Journal of Indian Psychology</i> , 8(2), 43-46. DOI: 10.25215/0802.204.
9	El Firdoussi, S., Lachgar, M., Kabaili, H., Rochdi, A., Goujdami, D., & El Firdoussi, L. (2020). Assessing Distance Learning in Higher Education during the COVID-19 Pandemic. <i>Education Research International</i> , Article ID 8890633, 1-13. <a href="https://doi.org/10.1155/2020/8890633">https://doi.org/10.1155/2020/8890633</a>
10	Gupta, M. M., Jankie, S., Pancholi, S., S., Talukdar, D., Sahu, P. K., & Sa, B. (2020). Asynchronous environment assessment: A pertinent option for medical and allied health profession education during the COVID-19 pandemic. <i>Education Sciences</i> , 10(12), 1-14. <a href="https://doi.org/10.3390/educsci10120352">https://doi.org/10.3390/educsci10120352</a>
11	Heng, K., & Sol, K. (2020, December 08). <i>Online learning during COVID-19: Key challenges and suggestions to enhance effectiveness</i> . Cambodia: Cambodian Education Forum. Available at <a href="https://cambodianeducationforum.wordpress.com/2020/12/08/onlinelearning-during-covid-19-key-challenges-and-suggestions-to-enhanceeffectiveness/">https://cambodianeducationforum.wordpress.com/2020/12/08/onlinelearning-during-covid-19-key-challenges-and-suggestions-to-enhanceeffectiveness/</a> .
12	Jena, P., K. (2020). Impact of pandemic covid-19 on education in India. <i>International Journal of Current Research</i> , 12(07), 12582-12586. DOI: <a href="https://doi.org/10.24941/ijcr.39209.07.2020">https://doi.org/10.24941/ijcr.39209.07.2020</a>
13	Saso, L. (2020). Digitalization and innovation of University Education in the Post-Covid Era. Available at <a href="https://www.unica-network.eu/wp-content/uploads/2021/01/chapter_on_innovating_university_education_in_the_post-covid_era.pdf">https://www.unica-network.eu/wp-content/uploads/2021/01/chapter_on_innovating_university_education_in_the_post-covid_era.pdf</a> .
14	Sahu, P. (April 04, 2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. <i>Cureus</i> , 12(4), 1-7, e7541. DOI 10.7759/cureus.7541
15	Widodo, SFA., Wibowo, YE, & Wagiran, W. (2020). Online learning readiness during the Covid-19 pandemic. <i>Journal of Physics, Conference Series</i> 1700, 1-5. doi:10.1088/1742-6596/1700/1/012033.
16	Yılmaz İnce, E., Kabul, A., & Diler, İ. (2020). Distance education in higher education in the COVID-19 pandemic process: A case of Isparta Applied Sciences University. <i>International Journal of Technology in Education and Science-IJTES</i> ,

4(4), 343-351. Available at <a href="https://ijtes.net/index.php/ijtes/article/view/112/pdf">https://ijtes.net/index.php/ijtes/article/view/112/pdf</a> .
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## Results

Adedoyin and Soykan (2020) discussed the challenges and opportunities created due to pandemic restrictions. The authors stated the view that online learning differentiate from emergency remote teaching. Among the challenges pointed out were technological restrictions, family interference, socioeconomic status and digital skills. Bao (2020), analyzing the situation in Peking University after the outbreak of the pandemic when 44,700 students were restricted to their homes or university dorms, mentioned that, based on students' responses in social media, their main difficulties from on-line teaching procedures were not stemming from technical inadequacies. but from the lack of a good learning attitude. There was also reference to problems such as the lack of self-discipline, the absence of suitable learning materials, or the learning environment due to their isolation to their home environment. Based on these, the author proposed six instructional strategies to improve students' engagement and concentration.

Brammer and Clark (2020) examined the impact of pandemic to Business Schools in UK, Australia and parts of Asia. The researchers characterized Covid-19 as 'a natural experiment in which numerous innovations are trialed and evaluated'. Among others, they pointed out the need academic staff to adapt rapidly. What was of more interesting was that the authors mentioned a significant change of balance in the role of the academic staff between research and teaching recognizing the reduced emphasis in research during the pandemic period. Ahlburg (2020) highlighted the importance of educational sector for the economy of the United Kingdom and the role the foreign students play for the financial health of the sector. During Covid-19 the universities were not affected all equally since the number of the foreign students enrolled in each institution was different. The author raised the issue of university research funding too since the main proportion of funding stems from the tuition fees. Chandasiri (2020) referred to the effects to mental health resulted from the delay of opening of the educational institutions. A point that is interesting is that young people either students or pupils at urban areas were 'less prone to depression than their rural peers' (Shigemura et al., 2020, as referred to Chandasiri, 2020, p. 13). The author suggested that the problem was arising from the fact that in Sri Lanka a considerable number of students did not have internet connection at home. Moreover, the author pointed out that subjects requiring laboratories as well as fine-art related subjects cannot be taught online.

Coman et al. (2020) collected data from 762 students from the 2 largest universities of Romania in order to investigate their perceptions concerning online learning. The responses of the students in Romania coincided with findings in other researches. Thus, digital skills, technological problems, lack of interaction and communication, and improper teaching style were the main barriers to the transition to online educational systems. Dawadi et al. (2020), analyzing the transfer of educational system in Nepal in e-learning procedures, raised question regarding equitable access to e-learning and distinguished the reaction of countries technological advanced to countries without adequate infrastructure. The researchers argued that, in covid-19 era, the sudden transfer to e-learning broadened the 'inequalities gap'. The authors, among others, referred also to the lack of experience in conducting online classes. The only exception to this was Nepal's Open University. Additionally, the authors referred to the uncertainties raised when issues of parents' unemployment occur within the

family environment. Moreover, a significant point was their mention that this situation will be worse in rural areas. Dubey and Pandey (2020) analyzed the challenges that higher education in India was faced with since in this country the number of the institutions is high and moreover there is high diversity between the profile of the learners. The authors presented the horizontal problems existing for all institutions and they also referred to the possible measures that could be taken to face the problems. One of the problems identified was the fact that most learners were living in remote rural areas where technological facilities are questionable.

El Firdoussi et al. (2020) carried out a survey in Morocco with 3037 students and 231 professors participating in it. The aim of the survey was to investigate the limitations of e-learning platforms used from the universities during covid-19 period. The findings were very interesting since both students and professors responded that they did not considered online learning more interesting than ordinary learning. Technical issues, digital skills and the extensive time spent in front of the computer, as well as the physical and mental strength required for this purpose, were some of the issues revealed from the results of the survey. Gupta et al. (2020) reviewed the assessment methods applied in medical schools during the pandemic when asynchronous mode of education had prevailed. The authors described the framework of a good assessment both in synchronous and asynchronous education. Some of the restrictions referred, apart from the technological dysfunctions to the asynchronous education, were the distractions from family environment, the inability of the educator to be certain for the assessment delivered by the student, the need to use technological solution such as video in order to ensure the fairness and integrity in assessment procedures.

Heng and Sol (2020) also pointed out the difficulties of the transaction from face-to-face to online learning for countries where resources were scarce taking as an example Cambodia. The authors recognized 5 basic challenges among which the technological infrastructure and digital competence, socio-economic factors and compatibility were included. The infrastructure restrictions such as internet access were also recognized as drawback in rural areas. The difficulty of low socioeconomic families to compete since they did not have the means required e-learning process was also mentioned. Finally, the researchers carried out a review of all the recommendations in the related literature regarding the improvement of learning procedures in covid-19 era.

Jena (2020) investigated both negative and positive impacts of pandemic in the educational system of India. Regarding higher education, the researcher recognized that not every student had the appropriate internet access or technological devices required for e-learning. Additionally, not all the Universities had the appropriate digital facilities. Delays to the payments of the fees, limited demand for international studies, delays for students to enter the job markets, were some of the negative impacts also pointed out. Sahu (2020), referring to the challenges that universities have to face during the outbreak of the pandemic, mentioned (1) shifting from face-to-face to online classes, where infrastructure issues are put into question, (2) assessment and evaluation, and the related uncertainties raised both for faculty members and students during the assessment procedures, (3) international students, since many international students were practically trapped in their university city and could not travel back to their home thus administrators had to face the challenge of ensuring accommodation and food to their international students, (4) travel restrictions associated the confusion this brought with the postponement of any transition either for academic reasons such as participating in conferences or either for students who could not travel back home, (5) mental health, since uncertainty and anxiety regarding



the future affected the mental health of the students along with the uncertainty of their future for the new graduates regarding their career, (6) support services from the Universities, associated with the necessity of the universities to establish support procedures for all the issues arising due to the effects of the pandemic.

Saso (2020) pointed out the impact of the restrictions due to the pandemic on the mobility both of students and academic staff through European Erasmus exchange programs. The importance of mobility in Europe stems from the fact that it contributes to the development of a common identity. To maintain the benefits of mobility, the author proposed the transfer to virtual mobility instead and proposed 5 interventions in order virtual mobility to be effective and operational. Widodo et al. (2020) recognized digital technology and learning innovation as the two key factors of education in covid-19 era. The authors presented different definitions from the related literature regarding the term e-learning and six benefits were reported regarding e-learning, namely, (1) connectivity, (2) flexibility, (3) interactivity, (4) collaboration or the use of discussion tools can support collaborative learning beyond the classroom, (5) extended opportunities in terms of e-content and (6) motivation. The research aimed mainly at examining student online readiness and for this purpose 16 related studies were examined. Different aspects of defining online learning readiness were presented. The final conclusion of the analysis was that, ultimately, student readiness depended on the following factors: equipment capability, technology skills, self-directed learning, motivation, and perceived usefulness. Worth mentioning to that conclusion was the fact that equipment capability and technology skills were two factors that did not necessarily were conditions that always up to the student to form.

Yılmaz İnce et al. (2020) conducted a survey questioning the view of the students studying at Isparta Applied Sciences University regarding distance education. The authors presented the advantages and disadvantages of distance learning and they also reviewed the research that compared distance learning with formal education. As mentioned above, the researchers investigated students' opinion about distance education. It is interesting to mention that one of the issues investigated in the questionnaire was whether students had access to internet other than through their phone Internet. It was recorded that 53% responded positively that they had, and, based on the results, those who did have internet access at home were more involved in all the items of distance learning. Another finding that was also significant was that in the comparison between formal education and distance learning they considered formal education more efficient. However, the positive or not opinion of students regarding distance learning depended largely on whether the respondent student has had internet access other than their mobile. This finding confirmed once again the importance of technological infrastructure and availability of access to the e-learning procedures.

**Table 2:** Summary of the 15 papers reviewed

AUTHOR	YEAR	REFERENCE	COUNTRY SPECIFIED OR NOT	RESEARCH WITH PARTICIPANTS OR NOT	ELEMENTS OF UNFAIRNESS (constraints and dysfunctions)
Adedoyin O. B., & Soykan, E.	2020	Interactive Learning Environments	x	x	<ul style="list-style-type: none"> <li>▪ Technological restrictions</li> <li>▪ Socioeconomic factors</li> <li>▪ Human, friends and pets interference</li> <li>▪ Digital incompetence</li> <li>▪ Compatibility</li> </ul>
Ahlburg, D. A.	2020	The Political Quarterly	UK	x	<ul style="list-style-type: none"> <li>▪ Educational institutes put in financial jeopardy due to the restricted mobility of foreign students</li> <li>▪ Restriction to academic research due to the decrease of tuition fees</li> </ul>
Bao, W.	2020	Hum. Behav. & Emerg. Tech.	China	x	<ul style="list-style-type: none"> <li>▪ Students face lack of a good learning attitude, lack of self-discipline, suitable learning materials, or good learning environments when they are self-isolated at home</li> <li>▪ Faculty members are facing the challenges of lacking online teaching experience, early preparation, or support from educational technology teams</li> </ul>
Brammer, S., & Clark, T.	2020	British Journal of Management	x	x	<ul style="list-style-type: none"> <li>▪ Staff have experienced a significant shift in the balance between research and teaching in their roles</li> </ul>
Chandasiri, O.	2020	International Journal of Advanced Education and	Sri Lanka	x	<ul style="list-style-type: none"> <li>▪ The way the rural students are affected varies from that of their urban peers.</li> <li>▪ The undergraduates who would be</li> </ul>

		Research			<p>graduates in a short period are the most affected.</p> <ul style="list-style-type: none"> <li>▪ No internet connection at home. The lack of technological facilities, barred access to institutional libraries and incapability to prepare lessons properly</li> <li>▪ How is it possible to conduct online courses on laboratories, music and arts?</li> </ul>
Coman, C.et. al.	2020	Sustainability	Romania	762 students from two of the largest Romanian universities.	<ul style="list-style-type: none"> <li>▪ Technological problems</li> <li>▪ Teachers' lack of technical skills</li> <li>▪ Teaching style in an online environment</li> <li>▪ Lack of interaction</li> </ul>
Dawadi, S. et al.	2020	Sage Submissions preprint	Nepal	x	<ul style="list-style-type: none"> <li>▪ Broaden the inequalities gap</li> <li>▪ Universities with no experience in e-learning methods, disadvantage compared to technological advanced countries</li> <li>▪ Parents have lost their jobs due to the pandemic and their economic crisis has worsened. Likely that some parents may not be able to afford their children to attend school (or university)</li> <li>▪ Situation will be worse in rural areas</li> </ul>
Dubey, P., & Pandey, D.	2020	The International Journal of Indian Psychology	India	x	<ul style="list-style-type: none"> <li>▪ The majority of learners are living in remote rural areas where technological facilities are questionable</li> <li>▪ Infrastructure and access to technology</li> </ul>

El Firdoussi, S. et al.	2020	Education Research International	Morocco	3037 students and 231 professors enrolled in different stages of higher education programs	<ul style="list-style-type: none"> <li>▪ Technical issues</li> <li>▪ Distractions from family members,</li> <li>▪ Availability of online devices, and broadband connectivity issues</li> <li>▪ Difficulty for the learners to attend the progress of their students</li> </ul>
Gupta, M. M. et al.	2020	Education sciences	x	x	<ul style="list-style-type: none"> <li>▪ Inequities due to internet connectivity, lack of devices and resources for online education systems</li> <li>▪ Distractions from family members</li> <li>▪ Adaptability, lecturers need to include formative assessments to test student understanding</li> <li>▪ Issues of fairness and integrity when assessing students. Can be suitably addressed by implementing technological tools such as video and audio recording surveillance software</li> </ul>
Heng, K., & Sol, K.	2020	Cambodian Education Forum	Cambodia	x	<ul style="list-style-type: none"> <li>▪ Absence of internet access in rural areas</li> <li>▪ Lack of technological skills</li> <li>▪ Socioeconomic restrictions</li> <li>▪ Compatibility, inappropriate for practical disciplines such as sports, engineering, and medical studies</li> </ul>
Jena, P. K.	2020	International Journal of Current Research	India	x	<ul style="list-style-type: none"> <li>▪ Differences in internet access and available digital equipment among both students and among different Universities in India</li> <li>▪ Delays in the placements for students in the market</li> <li>▪ Not all teachers/students are good the</li> </ul>

					<p>sudden transition from face to face learning to online learning.</p> <ul style="list-style-type: none"> <li>▪ Classes have been suspended and exams at different levels postponed.</li> <li>▪ Decline in the demand for international higher education</li> <li>▪ Delays to the payments of the fees</li> </ul>
Saso	2020	unica-network.eu			<ul style="list-style-type: none"> <li>▪ Lack of mobility</li> <li>▪ Confinement of integration procedures in EU</li> </ul>
Sahu, P.	2020	Cureus	x		<ul style="list-style-type: none"> <li>▪ Infrastructure differences</li> <li>▪ Differences in students/academic staff preparedness</li> <li>▪ International students trapped in their studying place away from home town</li> <li>▪ Postponement of any academic event due to travel restrictions</li> <li>▪ Mental health problems arising</li> </ul>
Widodo, SFA et al.	2020	Journal of Physics: Conference Series	x	x	<ul style="list-style-type: none"> <li>▪ Student readiness depends on 6 factors equipment capability, technology skills, self-directed learning, motivation, and perceived usefulness.</li> </ul>
Yılmaz İnce et al.	2020	International Journal of Technology in Education and Science	Turkey	the participants of the research were 1011 students are students at Isparta University of Applied Sciences	<ul style="list-style-type: none"> <li>▪ The opportunities of the participants as having computer and internet access other than their mobile phone affect their views on distance education.</li> </ul>



From the above analysis, the following elements of unfairness have been identified regarding either specific characteristics, namely elements of unfairness across countries, within countries, among universities, within universities and among students or having a horizontal impact. In particular:

- 1) Across countries
  - a. The impact of pandemic differs between developing and developed countries. Developing countries are less prepared and have less available resources to make the adjustments required from the passing from face-to-face to distance learning.
  - b. The impact of pandemic is greater for countries in which education sector plays an important role in its economy (e.g. UK).
- 2) Within countries
  - a. Rural and remote areas within countries are less favored from the pandemic since they usually face problems with internet connectivity and technology infrastructure.
- 3) Among universities
  - a. Both universities and academic staff that have already developed distance modules were better prepared to the need for the instant transfer to distance learning.
  - b. Universities with considerable number of international students had to cope with economic issues concerning the accommodation the facilities offered to the students trapped in their university campus.
  - c. Differences raised in the level of impact according to the size of the educational institutions. Larger institutions have usually better technological equipment and economic means to adjust to the new circumstances though they have to cope with greater number of students.
- 4) Within universities
  - a. Courses with practical modules face more problems in completing their courses compared to courses with more theoretical modules.
  - b. Scientific research was left behind due to the time required for the adjustment to the new system of distance learning.
- 5) Among students
  - a. Students with lower incomes face more intensive the transaction due to the lack of means (equipment, connectivity) to adopt to distance learning.
  - b. Students studying abroad or in another area within the country face more difficulties, either because they were trapped away from their family residence or because they are faced with more expenses.
  - c. Students close to graduation consider more the impact of the delay that might have on their future professional rehabilitation.

As far as the elements of unfairness having a horizontal impact are concerned, these are: 1) Lack of mobility and 2) Lack of direct human interaction. Regarding lack of mobility, especially in European framework where Erasmus programs are implemented and play a crucial role to the integration of European Union, the lack of their implementation is considered as a crucial impact and a lag for current students (Saso, 2020). Finally, the lack of live interaction between the academic society in the university institutions along with the isolation that people were experiencing due to confinement have raised a great discussion concerning the psychological impact of pandemic and that holds naturally not only in the level of tertiary education but for all levels of education.

## Conclusions

In this paper it was attempted to highlight the unfairness elements occurring in tertiary education arising from the constraints and the dysfunctions occurred due to the sudden passing from face-to-face to online distance learning. Elements of unfairness are present since the analysis revealed that some stakeholders seem to benefit more from the new situation formed, while others seem to be in less favor condition. It is characteristic that developing countries and stakeholders with economic restrictions cope difficult with the demands of this sudden change. Thus these elements of unfairness reported seem to confirm, to reinforce and to bring us back to the discussions raised even before covid-19 era about fairness in the access to the higher education and distributive justice in the allocation of the resources in the sector.

It would have been an interesting study in future to expand further the number of the articles reviewed especially after an adequate time period when the literature will have been enriched and the time will have given the space to examine the impacts of covid-19 era in tertiary education under a more mature perspective. Another interesting issue is to look at how core theories such as Equity Theory and Rawl's Theory of Justice with their correspondent rules could contribute to overcome some if not all the above elements of unfairness. Finally, another issue left open for future investigation is the analysis of the benefits and the opportunities created during the covid-19 period and which unfairness elements are abrogated due to the new educational methods adopted. As supported in the related literature, covid-19 has led to changes not only to the way future generations will be educated, but also it has redefined the role of educators (Widodo et al. 2020). It is dared to claim that covid-19 era has also expand considerably the fields open to the researchers for analysis and investigation in tertiary education.

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